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ADDRESSES.

ADDRESS OF WELCOME.

Read at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June, 1889.

BY HENRY E. TURNER, M.D.,

OF NEWPORT, R. I.

Mr. President and Gentlemen of the American Medical Association:

The honor of presenting to you, gentlemen, an Address of Welcome on this highly interesting occasion, on the part of the local faculty of Newport, is one which I duly appreciate, as a flattering mark of confidence on the part of my associates, and as an agreeable form of introduction to yourselves, to whom I am very largely unknown, having never, though often delegated by the Rhode Island Medical Society, had the satisfaction of attending a Session of the National Association, because, generally, of the great distances of the meetings from my place of residence.

Newport, as a resort for health or pleasure, is more or less familiar to you all, but its pretensions as a centre of wealth, and taste and culture, in days long past, and especially of medical interest, are not as familiar to your minds, as to those of the residents of this ancient and formerly metropolitan borough; a few remarks of an historical character, have therefore seemed to me appropriate to the occasion.

During the greater part of the eighteenth century, Newport was the theatre of a very extensive and lucrative foreign trade, which came to a conclusion at the Revolution by reason of its occupation by British forces for a long period, and the consequent interruption to trade, and removal of a large proportion of its population, and the absolute loss and waste of much of its capital, and the diversion of a large part of the balance to other fields of industry; so that at the conclusion of the war it presented a scene of desolation, dilapidated wharves and store-houses, neglected buildings, streets and dwellings and general decay, and an idle and poverty-stricken population in place of one characterized as formerly by all the marks of thrift and industry, and only feeble remnants of the elegance and style formerly exhibited, and in which, in the heyday of its prosperity, it had been preëminent.

One result of the wealth and hospitality, and high cultivation of the better classes of Newport society, was the inducement presented by constant familiar association with European capitals, to men of culture and refinement, to take up a temporary or permanent residence in Newport, whose natural attractions were then as now, highly appreciated; and we find, accordingly, a galaxy of names of medical men of European birth and education, who became identified with Newport in its palmiest days as practitioners of medicine, who left on the minds of their contemporaries and of several succeeding generations the impression of very high accomplishments and very profound wisdom, and the younger natives who had the benefit of their instructions and example, sustained the character which they had established.

Among the former the names are prominent of Vigneron, Brett, Fletcher, Moffatt, Haliburton, and Oliphant. Among the latter, Senter, Mason and others.

Dr. Morbert Felicien Wigneron, or as it was latterly written and pronounced Vigneron, was born and baptised June 2, 1660, in the Parish of La Ventie, Diocese of Arras, Province of Artois, France. He is presumed to have been in Newport early in the eighteenth century, having married Susanna Pierce in 1704. He died in Newport, at a very advanced age, having practiced with a very high degree of reputation, and was succeeded by two sons and one grandson in his practice and in popular esteem, insomuch that within fifty years of this time tradition had preserved his fame, and the old French doctor was often referred to by old people as one of the luminaries not entirely forgotten.

His son, Charles Antoine Vigneron, after thirty-five years' practice in Newport, in which he fully maintained the reputation of his father, died of small-pox in New York, in 1772.

His other son, Stephen, sailed as surgeon of a privateer in the old French war, after conspicuous service at Cape Breton, and the capture of Louisburg, and was never heard of after.

The grandson, Stephen also, was a surgeon in the Continental Army, and died of typhus on board the Jersey, prison ship, in New York.

Dr. John Brett, a graduate of medicine at

Leyden, where he enjoyed the advantage of the instruction of the celebrated Boerhaave, came to Newport about 1743 and lived here for many years. He enjoyed the reputation of a highly accomplished physician, and a man of great scholastic and literary attainments.

Dr. William Fletcher came to Newport during the Revolutionary war as surgeon in the British navy, but was transferred to the army and retired on half pay, when he entered on the practice of medicine in Newport, in 1785, and died here March 9, 1788, having, as his epitaph relates, "lived like a gentleman and died like a philosopher." Dr. Fletcher was born in Lancashire, England, in 1742, and was, therefore, at his death 46 years of age.

Dr. John Haliburton came to Newport about 1760, probably, and married January 4, 1767, Susannna, daughter of Jahleel Brenton, Esq., of Newport, sister of Admiral Jahleel Brenton, of the British Navy. This connection gave him high social position, and identified him with the wealthiest and most influential family in the Colony, and his career was a most successful and brilliant one until at an early period of the Revolution, he came under suspicion of loyalist practices and became a refugee, and passed the rest of his life in Nova Scotia, dying there in 1807, æt. 69 years. He was the father of Sir Brenton Haliburton, an eminent jurist, and for many years Chief Justice of Nova Scotia.

Dr. William Hunter, said to have been a kinsman of the distinguished brothers, William and John Hunter, of Edinburgh, was a native of Scotland, and a graduate of Edinburgh University, then considered the centre of medical light. He was born in 1731, and died at Newport, January 31, 1777, from fever incurred in hospital service. He has been reputed to have been a refugee after Culloden, but if the dates are correct, he was too young to have acquired a medical education in 1746, when the rebellion collapsed, and too young to have incurred the penalty of rebellion, but the tradition has been a very tenacious one. He is supposed to have come to Newport about 1750. He soon acquired a prominent position as a practitioner in Newport, and in 1758 was elected physician and Surgeon-General of the Rhode Island troops, and served in the unfortunate expedition to Canada under General Abercrombie, and the subsequent more successful one under General Amherst, when the fall of Montreal closed the war, and Dr. Hunter returned to his practice in Newport, which was very successful.

In 1756, Dr. Hunter delivered in the State House in Newport, the first course of anatomical lectures ever given in America. September 13, 1761, he was married to Deborah Malbone, daughter of Godfrey, Esq., of Newport, by which he established an alliance with one of the most influential and wealthy families in the Colony, and until his death he was a prosperous and successful man.

Dr. Hunter was active and very positive in his adherence to the cause of the Crown in all the troubles preceding the Revolution, and was consequently very obnoxious to the other party, but he died while the British forces were in possession at Newport, and in the full persuasion of the final triumph of the royal cause. He was outspoken in his denunciation of those he was pleased to style "the domned Rubbels."

Dr. Thomas Moffatt, a Scotch refugee, after Culloden, came to Newport, and practiced medicine with much reputation until 1765, when he became obnoxious to the people from his activity in the enforcement of the Stamp Act, and was driven away, but returned to Newport when it was in the possession of the British, and left on their evacuation, never returning. He was a man of high reputation. Dr. Senter was a student in his office.

Among the highly distinguished medical men who made Newport their residence in the last quarter of the eighteenth century, Dr. David Olyphant should not be overlooked. He was born in Scotland, at Pitheaoles, near Perth, and was a younger brother of Lord Olyphant and was heir to his title, which he never claimed having become thoroughly Americanized. He was in the Jacobite Rebellion of 1745, and escaped and came to Charleston, South Carolina, where he practiced for many years with great success and distinction. At the commencement of the Revolution he offered his services to Congress, and was appointed Director-General of the Southern Hospitals. He removed to Newport in 1785, and married his third wife, Miss Ann Vernon, here in 1786. He died in Newport in 1804, æt. 85 years. Dr. Olyphant was an esteemed member of the Society of the Cincinnati of Rhode Island, and emphasized his devotion to American sentiments by naming his son David Washington Cincinnatus Olyphant.

Among those who were in the settlement at Portsmouth, (upon the island of Rhode Island), in its first year, 1638, were Dr. John Clark and Dr. Robert Jeoffreys.

By Act of the General Court of date September 17, 1644, at Newport,

"It is ordered that Mr. Robert Jeoffreys shall be authorized to exercise the function of Chirurgerie."

Mr. Jeoffreys was active and prominent in the affairs of the settlement, but his claim as a medical practitioner is not otherwise alluded to, and as John Clarke was a signer of the original compact, and one of the first arrivals, and was a very much more important member of the body, and is not mentioned in the public record in his medical relation, the inference is that Mr. Clarke had the authority of a European University, while

Mr. Jeoffreys depended on this act of the Legislature for his license to practice, and there is almost conclusive evidence, recently obtained by Dr. Storer through exhaustive inquiries made for him by Dr. Wm. O. Priestley, of Kings College, London, that Mr. Clark, who spent many years afterward in successful practice in London, was a graduate of the University of Leyden, then the most famous school of medicine in the world. He is entered upon the registry of that University in 1635 as "Johannes Clarcq, Anglus."

Singularly enough in March, 1664, the year in which the Charter of King Charles II went into force, the General Assembly passed the following Act, viz.:

"WHEREAS: The Court have taken notice of the great blessing of God, on the good endevers of Captayne John Cranston, of Newport, both in Phissick and Chirurgery, to the great comfort of such as have had occation to improve his skill and practice, etc. The Court doe, therefore, unanimously enacte and declare, that the said Captayne John Cranston is lycenced and commissioned to administer Phissick and practice Chirurgery throughout this whole Collony, and is, by this Court, styled and recorded, Doctor of Phissick and Chirurgery, by the authority of this, the General Assembly of this Collony."

This, it is safe to say, was the first degree of M.D. ever granted and promulgated on this Continent, and we have no means of knowing what qualifications Mr. Cranston possessed or by what means the General Assembly ascertained them.

Dr. Cranston was born in Scotland in 1625 or 1626, and appears first on the Rhode Island Record in 1644, æt. about 19 years, and died in Newport, March 11, 1680. He was very conspicuous and influential in all the affairs of the Colony, and was Governor at his death. His son Samuel was also Governor from 1698 to 1727, 29 years, also dying in the office.

Dr. John Clarke, who was one of the first settlers and a signer of the Compact, was undoubtedly the most conspicuous and important of the Rhode Island founders. He was born in 1609 and died April 20, 1676, being at the time of exodus from Massachusetts 30 years of age.

Evidently Dr. Clarke was a potential factor, and an esssential element in all the events which resulted in establishing and maturing the little Commonwealth which eventually comprised the settlements of Aquidneck, Providence, and Warwick, with the gradual annexation or re-annexation of Kings Province, now Washington County, always claimed by Rhode Island, but contested by Massachusetts and Connecticut, and finally of the Eastern towns in 1747, which had been attached to the jurisdiction of Plymouth Colony, which itself had been merged in Massachusetts since 1690. In all these transactions Dr. Clarke had been an effective agent, as he was in procuring the charter of 1663, which charter, under which the Colony, and State of Rhode Island and Providence Plantations was administered until 1843, confirmed by the royal authority of Charles II, the right of liberty of conscience to all living under it, in the most formal manner, even as it had been previously established by law under the former charter. Thus did the State of Rhode Island become the first political organization among men, having as its basis of organic law this vital principle of individual freedom.

Besides being thus important in the Colonial affairs, Dr. Clarke held high professional rank as a physician. He also was the founder and first pastor of the first Baptist Church in Newport, and it is a mooted point whether this did not antedate that in Providence, in which case it would be the first Baptist Church established in America. Dr. Clark was the faithful and diligent, and learned pastor of this Church until his death. His estate was bequeathed to three assigns for public purposes, as a perpetual trust.

Drs. Thomas and John Rodman, came to Newport in 1680; they were sons of Dr. John Rodman, of Christ Church Parish, Island of Barbadoes. Dr. John, after some years practice in Newport, went to Block Island, and after remaining there for several years, he settled on Long Island, where he has a numerous progeny. Dr. Thomas remained in Newport and died here, January 17, 1727, æt. 80 years and 16 days.

Two of Dr. Thomas Rodman's sons were physicians. Thomas lived and practiced in South Kingstown, R. I., where he has numerous descendants. Clarke remained at Newport where he died in 1752, æt. 53 years.

Two sons of Dr. Clarke Rodman were physicians, Walter and Thomas.

Dr. Walter Rodman died at Jamestown, in 1753, æt. 34 years, having practiced at Newport for fourteen years.

Dr. Thomas Rodman was born in 1726, was Freeman of the Colony in 1745. In 1759 he was elected surgeon of the Rhode Island Regiment in the service of the Crown, and in 1760 was re-elected. He was in the campaigns against the French and Indians on the Canada frontier during those two years, from which time his record is not known. So that from 1680 to 1760, not quite a century, the citizens of Newport were indebted to the Rodman family for continuous medical service. They were all esteemed members of the Friends' Society.

Among the sons of the soil who worthily succeeded the luminaries heretofore mentioned towards the close of the eighteenth century, were Drs. Senter and Mason.

Dr. Isaac Senter was born in Londonderry, New Hampshire, in 1753. Nothing is known of his boyhood. In early youth he became a student in the office of Dr. Thomas Moffatt, before spoken of as a Scotch refugee. Dr. Senter joined the Rhode Island forces, before Boston, at the beginning of the Revolution, and soon became surgeon

of a Rhode Island Regiment of the Continental line, and was in Arnold's department of Montgomery's unfortunate expedition to Quebec. In 1779 he left the service and returned to a practice which he had left in Cranston, R. I. Here he remained until 1780 when he came to Newport, and was the leading practitioner here until 1799, when he died at the early age of 44 years, having achieved a more brilliant fame, particularly as a surgeon, than has fallen to the lot of any other man in this community.

Dr. Benjamin Mason, a native of Newport, after studying with Dr. Senter, settled in Newport, and practiced with great success until his death in 1801, æt. 40 years. Dr. Ursher Parsons described him as at the head of his profession in Newport.

The faculty has been represented in the present century, in a manner not unworthy the example given in the two preceeding ones, by a most respectable body of men, one generation of whom passed away between 1830 and 1840, viz.; Dr. William Turner, Dr. Edmund Waring, Dr. David King, and Dr. Enoch Hazard, all of whom commenced practice with the century, to be succeeded by Dr. James V. Turner, Dr. Theophilus C. Dunn, who was an early Vice-President of the American Medical Association, Dr. Daniel Watson, and Dr. David King, Jr., Dr. Samuel W. Butler, and others, including some of those still in active life, who need not be mentioned in detail. There should be named Dr. Charles Cotton, who came to Newport about 1814, and formed a link between the first and second class, dying in 1870 at the ripe old age of 81 years, an age very much beyond any of his professional contemporaries.

Having said this much of the profession, I trust a few remarks, not especially pertaining to it, may be excused.

One of the most interesting episodes in Newport history was the arrival here of the distinguished Dr. George Berkely, the author of the "Minute Philosopher," in 1728. He had left Europe with the design of establishing at Bermuda a college for the education of the American Indians. Having abandoned this plan as impracticable, he made his abode for several years at Newport, where his influence was soon felt in the inauguration of a decided advance in literary culture, which eventuated in the founding of a literary association which afterward became the Redwood Library Association, an institution which at an early period held a high rank among the American localities of literary pretensions, and which gave to Newport the advantage of a library of a high tone at an earlier time than any other American town, not the seat of a Collegiate Institution. The original books in this collection were of the highest character.

Among the beautiful spots which adorn this Island, none is more beautiful than Butts' Hill, at Portsmouth, and none appeals as strongly to the interest of all Americans, it having been the central point (Point d'Appui) of the battle of Rhode Island, fought on the 29th of August, 1778, and pronounced by Lafayette "the best fought action of the War." The site at present is marked by the remains, remarkably well preserved, of a strong fort erected by the British, but at the time of the action in possession of the Americans, and from which the most vigorous assaults of the British and Germans were successfully repulsed by the Americans, leaving them still in possession at the close of the day. But during the night the Americans made a most successful retreat across the bay, as was said, without the loss of a man or a pound of ammunition or stores. The expected British fleet arriving next morning surrounded the Island, and but for their timely retreat not a man of the American army would have escaped.

From the fort a most superb landscape is presented comprising the East and West Narragansett Bay and Mount Hope Bay, and exhibiting very distinctly all the lines of approach and retreat.

The failure of the siege of Newport and the capture of General Piggott's army of 7,000 men, which had seemed almost assured, and was defeated only or chiefly through adverse weather, was one of the bitterest disappointments encountered by Washington during the entire war, and bore very heavily on the scattered and impoverished population of the State, and especially on the Islanders who were generally refugees dependent on the hospitality of the already overburdened denizens of the mainland, and when, after the British evacuation, they returned to their homes, universal and indiscriminate desolation had usurped the place of their thrifty and comfortable farm steads, and houses, barns, fences and orchards, and everything capable of being used as fuel had been consumed to supply the garrison and residents. No accessible portion of the mainland being in possession of the British, and the British troops and German contingent are said to have suffered excessively from want of fuel, the winters during their occupation having been exceptionally severe.

From DeWarville's travels in America," 1788, page 80:

"I went from Providence to Newport in a packet boat This journey might be made by land, but I preferred the water. We arrived in seven hours and a half, and during two hours we had contrary wind. This distance is thirty miles. We never lost sight of land, but it offers nothing picturesque or curious. A few houses, some trees, and a sandy soil are all that appear to the eye.

"The Port of Newport is considered as one of the best in the United States. The bottom is good, the harbor capable of receiving the largest ships and seems destined by Nature to be of great consequence. This place was one of the scenes of the last war, the successive arrival of the American, English and French armies left here a considerable quantity of money.

"Since the peace everything is changed. The solitude is only interrupted by groups of idle men standing, with folded arms, at the corners of the streets, houses falling to ruin; miserable shops, which present nothing but a few coarse stuffs, or baskets of apples, and other articles of little value; grass growing in the public square, in front of the court of justice; rags stuffed in the windows, or hung upon hideous women; everything announces misery, the triumph of ill faith and the influence of bad government. You will have a perfect idea of it by calling to mind the impression once made upon us on entering the City of Liege.

"Recollect the crowd of mendicants besieging us at every step, to implore charity; that irregular mass of Gothic houses falling to ruin, windows without glass, roofs of half uncovered; recall to mind the figures of men scarcely bearing the print of humanity, children in tatters, and houses hung with rags, in short, represent to yourself the asylum of famine, the rascality and the impudence that general misery inspires, and you will recollect Liege, and have an image of Newport."

The over-weening pride and affection, which a native Rhode Islander cherishes towards his natal soil and the time-honored traditions and institutions of the Commonwealth of his fathers, must to denizens of other States comprising many times its area and supporting many times its population, seem almost absurd, but patriotism is a sentiment which bears no relation to the magnitude of areas, or to the numerical features of populations. The Scot of the days of Bruce and Wallace yielded no tittle in his devotion to Scottish independence and in national pride to the adherents of the great monarchies of France, England, Spain, and the German Empire, and despite the overwhelming superiority of England in population, territory, and resources, defied for generations with dogged tenacity, all the power of her arms and all the guileful influence of her most astute politicians in the unstinted and unscrupulous use of her almost unlimited wealth. Corrupt as were many of the leading Scots, the great popular heart always beat responsive to the love of country and to the honor of the name of Scot. And the final union of Scotland and England was not the result of conquest on the one part and of submission on the other, but of equal and harmonious adjustment of all differences.

The circumstances surrounding the first settlement of Rhode Island and the earlier portion of its career, were such as to give a peculiar bias to the minds of the settlers, and to cultivate the tenacity of purpose and the stern energy which especially characterized the early Rhode Islanders, even when compared with the Puritan and other elements which were in no wise deficient in the same characteristics so necessary in struggling against the disadvantages of a rough and unthankful soil, a rigorous climate, and a savage and relentless population. Besides all these, the Rhode Islanders encountered from the beginning, and at every subsequent period the antagonism of the adjacent Colonies.

All three of the Settlements, Providence, Aquidneck and Warwick, were made by parties who were refugees from Massachusetts, either expelled that jurisdiction or in fear of expulsion for the entertainment of opinions deemed heretical there, and particularly they held the opinion, which they directly promulgated and always adhered to, that in matters of belief every man is, and of right ought to be, his own judge. This doctrine, now accepted by all civilized communities, was then comparatively novel, and was long familiarly known as the Rhode Island doctrine or idea, and although not entirely new, had never so far crystalized into active power as to be enacted into authoritative form until adopted as their fundamental law by the General Assembly of Rhode Island, although understood by the settlers in their first informal agreement of settlement.

Every Rhode Islander, therefore, is peculiarly sensitive in relation to the sacredness of individual liberty, and no doubt this sentiment, in its excessive development, has often prevented the enactment of laws which may have been beneficial, but still we look upon it as calculated to have a beneficent influence, and the fact of its existence, which could hardly have failed to result from the relations referred to, will explain the excessive local feeling which belongs, of right, to a Rhode Islander.

The long delay of Rhode Island to accept the Constitution of the United States grew, in a great measure, out of this distinctive sentiment, and although unwise at that crisis argues no disparagement to Rhode Island patriotism, which has always made prompt and active response to all subsequent appeals as it had adhered to the struggle for independence under the stress of particularly severe and trying circumstances. I refer to the occupation, for a long period, of its principal town and seaport, and the suppression of its commerce, which had been its principal resource.

With the same warmth and singleness of heart, with which she has hitherto always responded to the call of duty, and with a full conception of the honor conferred on her, by your selection of her as your place of meeting on the present occasion, Rhode Island now opens its arms to welcome you, gentlemen of the American Medical Association, to all the enjoyments and conveniences which can be secured to you by willing hearts and active hands, and hoping that the most gratifying results may be derived from your deliberations, offers to you a warm greeting.

MME. DEJOINE KLUMPKE, an American lady married to a Frenchman, carried off her degree of doctoress at the Faculty of Medicine, Paris, last Saturday, with high honors. The lady has distanced all her competitors in the medical field. She was a pupil of the late Professor Vulpian. She has also written several standard works on nervous pathology and won valuable prizes.

ORIGINAL ARTICLES.

THE TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR BY IMMEDIATE REDUCTION AND PERMANENT FIXATION.

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The treatment of a fracture of the neck of the femur is always a source of anxiety to the surgeon. In many instances the diagnosis is attended by unusual difficulties and not infrequently a fracture of this kind is overlooked, even after what appears to have been a thorough examination, while at other times, for want of a correct diagnosis, patients have been submitted to a long and debilitating treatment when no fracture existed. Patients suffering from this injury are with few exceptions advanced in years and liable to succumb to complications incident to prolonged confinement in bed. The marantic changes in the tissues of the aged and in persons rendered prematurely old by hereditary or acquired causes are known to be antagonistic to a rapid repair of such an injury, while at the same time the anatomical conditions at the seat of fracture are such as are well calculated to retard, if not to prevent, the production of callus. With few exceptions our surgical text books and special work on fractures continue to advance the same ideas that have been prevalent for centuries concerning the process of repair in fractures of the neck of the femur, and assert that bony union is only possible if the line of fracture is completely, or at least, partially outside of the limits of the capsular ligament. Teachers and authors are so positive in their assertions that if the fracture is entirely intra-capsular a pseudo-arthrosis is inevitable, that many cases of partly extra-capsular fractures have been treated on the expectant plan the same as intra-capsular fracture, and only too often with the same unsatisfactory result. The time has come when it is no longer admissible to make such a distinction in the lecture room, the text books or at the bedside. Experience and experimental research have demonstrated that the proximal fragment, in case the line of fracture is entirely intra-capsular, does not only retain its vitality, but if placed in accurate contact with the opposite fragment, either by impaction or by mechanical fixation it takes an active part in the production of callus.

In a paper read at the meeting of the American Surgical Association, in 1883, ("Fractures of the Neck of the Femur, with Special Reference to Bony Union after Intra-capsular Fracture," Transactions of the American Surgical Association, vol. 1), I gave an account of fifty-four cases collected from different sources of bony union after intra-capsular fracture and in most of them the proofs in support of the assertion were so convincing that even skeptics on this subject would find it difficult to give to them a different interpretation. In the same paper I recorded the results of my own experimental work undertaken for the special object of demonstrating, if possible, that bony union after intra-capsular fracture is so seldom obtained, not so much on account of the anatomical peculiarities of the parts involved in the fracture as the inefficient treatment which is usually resorted to in its treatment. In the animals subjected to experiment the fracture was produced by making multiple punctures with a small drill through the neck of the femur entirely within the limits of the capsular ligament and fracturing the balance of the bone by forcibly rotating the femur inwards. Twenty-three fractures in so many different animals thus produced were treated on the expectant plan, or by simple fixation with a plaster-of-Paris dressing. The animals were killed from four weeks to three months after fracturing the bone, and the seat of fracture was carefully examined in every instance, but in none of them was I able to find any evidences of bony union. The best result obtained by this method of treatment was pseudo-arthrosis by the interposition of a short ligament between the fractured ends. Discouraged by the many failures I finally resolved to secure accurate coaptation of the fragments by drilling a hole from the trochanter major through the entire length of the neck and well into the head and fastening the fragments together with an aseptic iron, bone or ivory nail. Eight such experiments were made on cats. In two suppuration followed the operation. In the rest bony union or union by an exceedingly short ligament without any displacement of the fragments was obtained. I will quote only two of the experiments for the purpose of illustrating the method of procedure and of showing the condition and appearance of the bone after permanent union by callus.

Experiment 27.—Adult Maltese cat; subcutaneous fracture of left femoral neck; fixation of fragments by means of bone nail made from compacta of tibia of an ox. Animal killed fourteen weeks after operation. Neck of femur only slightly shortened; capsular ligament nearly normal; ligamentum teres intact; vertical section shows a slight curve in the upper portion of the neck; the head being slightly depressed. Perfect and complete bony union, the spongiosa being restored nearly to its normal condition. No traces of bone nail or perforation.

Experiment 32.—Young cat; subcutaneous fracture of neck of right femur, direct fixation of fragments with bone nail. Animal killed four months after operation. During life function of

the joint was perfect; vertical section through the head; neck and upper portion of shaft, shows that the line of fracture must have been entirely within the capsule, as the capsular ligament and bone outside of it presented a perfectly normal contour and appearance. Accurate measurements show only a very slight shortening of the neck; the osseous tissue composing the interior of the neck more dense than in the opposite bone. Spongiosa restored to nearly its natural perfection. No traces of track of perforation or bone nail.

In no case did I feel crepitation after the fracture more distinctly than in this instance, and the sudden giving way of the bone the moment it was fractured was well marked, and was heard by all of the assistants, and as the post-mortem examination shows a perfect restoration of the continuity of the bone, I am firmly convinced that this specimen represents a typical and perfect recovery of union by bone after intra-capsular fracture of the neck of the femur. The results obtained by immediate transfixion of the fragments stand in direct contrast to those treated by external fixation. Bony union, or union by short ligament, was the rule, non-union the exception. In the treatment of all fractures the two cardinal indications are: *Firstly*, to bring the fractured surfaces into accurate coaptation as soon as possible after the accident, and, *secondly*, to maintain uninterrupted approximation by permanent immobilization. In these respects the treatment of fractures is governed by the same rules as the treatment of wounds of the soft parts. In the repair of all injuries the severed tissues should be brought as nearly as possible in the same relative position they occupied in their normal condition and to retain them in such position by temporary mechanical measures until the completion of the reparative process. By following this rule the normal regenerative resources inherent in the tissues are taxed only to a minimum extent and definitive healing is obtained in the shortest possible space of time. As union between the divided or severed parts can only take place by the interposition of new material, the product of a regenerative process in the tissues at and in the immedate vicinity of seat of trauma, and as this process presupposes the existence of a connecting bridge of new blood vessels, it is evident that the length of time required to secure union will be greatly modified by the width of the intervening space. It is somewhat strange that the customary treatment of fractures of the neck of the femur which has governed the practice of surgeons from time immemorial, still commands the confidence of the profession. For centuries these fractures have been treated by some kind of extension and imperfect immobilization. The favorite treatment of to-day consists of extension by means of the weight and pulley as devised by Gordon Buck, and fixation of the limb by a long splint or two sand bags. The extension is applied for the purpose of counteracting muscular contraction, the cause of the shortening of the limb. If we consider the number and strength of the muscles which are inserted in the lower fragment, and which are the direct cause of the shortening, we can imagine the force requisite to overcome the longitudinal displacement. At best permanent extension by weight and pully corrects the shortening only gradually and always imperfectly and never secures immediate reduction, the first and most important indication in the treatment of any fracture. As the upper fragment is short, sometimes not reaching beyond the niveau of the cotyloid cavity, is deeply located and not parallel to the long axis of the lower fragment, but nearly at a right angle to it, all means of fixation short of complete immobilization of the pelvis and the lower fragment upon it must fail in securing uninterrupted coaptation and perfect immobilization. The result obtained by the customary treatment have been such that no better proof need be advanced to demonstrate its inadequacy. The long confinement in bed which it necessitates has often proved a direct cause of death. Bony union of fractures within the capsule has only occurred in cases where impaction had taken place and where this means of fixation was allowed to remain undisturbed until union was completed, in all other cases a pseudo-arthrosis proved to be the unavoidable result. In fractures outside of the capsule healing with shortening of an inch has always been considered an excellent result, and more frequently the shortening was in the neighborhood of two inches. The treatment by weight and pully extension and splint fixations requires constant watchfulness on the part of the surgeon and those who are in direct charge of the patient. Extension continued for two or more months not infrequently is followed by serious, if not permanent, damage to the structures of the knee joint.

It is my purpose on this occasion to call your attention to the advantages to be derived from the treatment of fractures of the neck of the femur by immediate reduction and permanent fixation as compared with the treatment by the usual methods. The treatment I shall describe is equally well adapted for intra- and extra-capsular, impacted and non-impacted fractures. As it is no longer necessary, from a practical standpoint, to make a distinction between an intra- and extra-capsular fracture, I will only allude to a few diagnostic signs which indicate the existence of a fracture through the neck of the femur which should be sought for, and carefully considered before a positive diagnosis is made.

SYMPTOMS AND DIAGNOSIS OF FRACTURE OF THE NECK OF THE FEMUR.

Displacement after fracture through the fem-

oral neck is due either to the fracturing force, muscular contraction or simple gravitation. In incomplete and impacted fractures it is caused entirely by the fracturing force. A number of incomplete fractures have been reported by König, King, Jackson, and Billroth. These fractures are produced by crushing, not overbending. If the force is transmitted through the long axis of the femur the lower portion of the neck gives way and Adam's arch penetrates the cancellated tissue of the neck to a certain distance, thus shortening the lower border of the femoral neck, a condition which would give rise to slight adduction, but no shortening of the limb, and the upper border of the trochanter major will be found in normal position in reference to Roser-Nélaton's line. If incomplete fracture take place at the expense of the posterior portion of the neck the limb will retain its normal length, but the posterior margin of the trochanter major would be displaced slightly in a posterior direction and would be somewhat less prominent than on the opposite side. If in an exceptional case the fracturing force should be transmitted through the trochanter major in an opposite direction and would crush a portion of the bone on the anterior surface of the neck, the slight deformity produced would be the same, only that the trochanter would be found rotated in an opposite direction. In all incomplete fractures then, no shortening exists and the upper margin of the trochanter major corresponds to the Roser-Nélaton line. In complete but impacted fractures the displacement is caused entirely by the fracturing force and is commensurate with the amount of bone tissue crushed at the seat of fracture. As the fracture in these cases is complete, more or less shortening is always present. A fall upon the foot or knee, as a rule, will fracture the neck at its narrowest portion, and, if the fracture is complete, no impaction will take place, unless it follows as a secondary occurrence from transmission of force through the trochanter major. In such cases the impacting force acts at a right angle to the fracturing force. Experiments and clinical observations have shown that the majority of fractures of the femoral neck are produced by force applied in the direction of the axis of the neck by falls upon the trochanter major. It is also well established that in most instances the neck gives way at its trochanteric portion, and that the posterior wall is crushed or fractured first, impaction of the posterior wall is therefore the rule. Besides shortening, an impacted fracture of the neck is always attended by slight rotation of the limb in the direction of the impaction. For instance, if the force is applied laterally through the trochanter, and, as is usually the case, from before backwards the posterior wall fractures first and impaction takes place here, the degree of rotation of the limb in an outward direction will be an indication of the extent to which impaction has taken place. In very exceptional cases, if, as has happened in a few instances, the fracturing force is applied against the posterior border of the trochanter major, the anterior wall of the neck is fractured first and impaction takes place at this point, an occurrence which is always indicated by the limb being rotated in an inward direction. In impacted fractures the upper margin of the trochanter major will always be found above the level of Roser-Nélaton's line, the outer surface of the trochanter is less prominent than on the opposite side and its posterior border is displaced backwards in the most common form of impaction with outward rotation of the limb. In complete fractures without impaction the displacements are due to active and passive causes. The shortening results from muscular contraction and increases with the restoration of muscular action, while the rotation outwards of the limb is due to the tendency of the limb to fall in this direction when in a condition of complete repose.

Method of Examination.—Injuries about the hip-joint of sufficient intensity to fracture the femoral neck in persons advanced in years should always be examined with the utmost care for evidences of fracture. Whenever possible a positive diagnosis should be made at the first examination. In some cases the symptoms are so characteristic that a correct diagnosis can be made almost on first sight, while in other instances all diagnostic resourses must be exhausted before a correct idea of the nature of the injury can be obtained. To make a thorough examination all clothing as far as the chest must be removed and the patient placed upon an even, smooth, unyielding surface, either upon a table or the floor. Inspection will reveal the presence or absence of a bruise over the trochanter major. If present the location of the superficial contusion will indicate the direction of the fracturing force. Suggillations about the hip are suggestive of a deep-seated injury, and not infrequently they make their appearance over the groin and along the inner side of the thigh in a few days after a fracture of the neck of the femur. If the limb is strongly rotated outwards, and by its position dislocation of the hip-joint can be excluded, it is more than probable that the femoral neck is fractured. In all cases of fracture of the neck, there is an appreciable fulness in the fold of the groin corresponding to the seat of the fracture. This swelling is caused by the hinge-like projection of the anterior portion of the neck, effusions of blood or inflammatory products, and, lastly, by the overriding or impaction of the fragments. When impaction has taken place at the base of neck, the trochanteric portion of the femur is enlarged from implantation of the upper fragment. More swelling is present in extra than intra-capsular fractures, as in the former there is more

hæmorrhage and the bone injury is more extensive. Another witness which can be elicited by inspection in cases of fracture through the femoral neck, is a slight depression between the great trochanter and the crest of the ilium, a change in contour caused by relaxation of the fascia lata, as was first pointed out by Dr. Allis. This sign is most marked when the patient is placed in the erect position. The symptoms which have been elicited by inspection and gentle palpitation must be verified by careful measurements. The information furnished by measurements carefully made can be relied upon in arriving at positive conclusions concerning the nature of the injury. It is not only superfluous but positively harmful to search for positive symptoms of fracture, crepitus, preternatural mobility of fragments, and new point of motion, in these cases; all manipulations during the examination of a supposed fracture in this locality should be made with the utmost care and gentleness. The search for crepitus and other positive symptoms of fracture has been the cause of incalculable harm. In many instances careless handling of the limb has resulted in disjunction of impacted fractures, or in tearing of periosteal or ligamentous bands, thus removing the conditions upon which rested the possibility of obtaining osseous union by the interposition of a short ligamentous band. In every case care is to be taken not to disturb the parts at the seat of injury for the purpose of making a diagnosis; it can never become necessary to administer an anæsthetic for the purpose of making a so-called *thorough examination*. Our diagnosis should depend on the presence or absence of the three most important symptoms—position of the trochanter major, shortening and eversion. A line drawn from the tuberosity of the ischium to the anterior superior spinous process of the ilium is called the Roser-Nélaton line, and with the trochanter major in its normal position and relations marks its upper edge. If the measurements show shortening, and the femoral neck is fractured, the upper border of the trochanter major will be found displaced beyond the Roser-Nélaton line to the extent of the actual shortening. It has recently been shown by Wight, Hamilton, Gurson, and others that inequality in the length of the lower limbs is a rather common occurrence, consequently in order to eliminate sources of error, it becomes necessary to ascertain the presence of asymmetry, should such exist, in applying measurements in the diagnosis of a fracture of the neck of the femur. For the purpose of avoiding errors, which might accrue from asymmetry of the lower extremities, Wight directs that the following measurements should be taken: (1.) Inside measurements from the superior anterior spines of the ilium to the lower ends of the internal malleoli. (2.) Outside measurements from the superior anterior spines of the ilium to the lower ends of the external malleoli. (3.) Measurements from the tops of the great trochanters to the lower ends of the external malleoli. (4.) Measurements from the bases of the tibiæ to the lower ends of the internal malleoli. (5.) Measurements from the superior anterior spines of the ilium to a line drawn transversely in front between the top of the great trochanters. These measurements give the length of the femur and tibia on each side as well as the entire length of both limbs, and if asymmetry of any of the bones exists this fact is easily determined. If actual shortening is found the existence of a fracture of the femur below the hip-joint is excluded by ascertaining the exact relation of the great trochanter to the Roser-Nélaton line, if the trochanter is found displaced upwards to the extent of the shortening and other symptoms point to fracture, the diagnosis of a fracture through the femoral neck may be considered as established. In very fleshy persons the landmarks which serve as points from which the measurements are made are not well-defined and not easily located, and it is on this account advisable to fix the location of each as accurately as possible and indicate it on the surface by a pencil mark before any of the measurements are made. The best instrument for making the measurements is a steel tape-line, with feet and inches marked on one side, and centimetres and millimetres on the other. Eversion is readily detected by inspection. In impacted fractures it may be very slight and a sudden or gradual increase of these displacements, days, week, or months after the accident, signifies that disengagement of the fragments has taken place, an accident probably caused by inflammatory osteoporosis and imperfect immobilization. If the surgeon has demonstrated by his examination that a fracture exists, the presence of impaction can be readily ascertained by gently rotating the limb upon its axis and by making slight traction; if these manipulations affect the head of the bone, impaction has occurred, and every care should be exercised to preserve the mutual fixation of the fragments. Unimpacted fractures of the neck of the femur seldom give rise to any difficulty in diagnosis. The symptoms attending them are so well marked that a correct conclusion can be reached without causing needless suffering or inflicting additional injuries in searching for any of the positive signs.

Treatment.—The treatment I shall advocate in fractures through any portion of the femoral neck consists in the fulfillment of two principal indications: (1.) Immediate reduction. (2.) Permanent fixation. The first part of the treatment, the adjustment of the fragments, is of course only necessary in non-impacted fractures. In impacted fractures no attempt should be made to correct any of the displacements, as the interlocking of the fragments secures the most favor-

able conditions for bony union to take place. It is not too much to assert that if the impaction in such cases can be maintained until the reparative process is completed, union by callus would be the rule, and non-union the exception. In all intra-capsular fractures, union is effected exclusively by the production of an intermediate callus, from the broken surfaces; nature's splint, the external or provisional callus, for well-known anatomical reasons, is always wanting, hence the mechanical support which is requisite to maintain uninterrupted coaptation has a more important and prolonged application than in the treatment of fractures in other localities. The time required for bony union to take place in fractures of the femoral neck is an unusually long one. Gurlt fixes the time at from 56 to 207 days, and the average duration at 84 days. Dupuytren estimates the time from 100 to 120 days, and states that it has been customary at the Hôtel-Dieu to keep these patients in bed for 80 to 100 days. There can be no doubt that many cases, which promised well from the beginning, terminated unfavorably from failure on the part of the surgeon to secure efficient means of fixation or by abandoning the treatment too early. An impaction may become disengaged after a few weeks spontaneously or by a slight movement of the patient if the fragments are not immovably fixed by some efficient external mechanical support. To guard against such an occurrence, the retentive measures should not be removed for at least 80 to 100 days. In impacted fractures the fragments have been placed in the best possible condition for bony consolidation, and the object of treatment consists simply in preserving the mutual penetration for a sufficiently long time to obtain restoration of the continuity of the bone. Permanent fixation of an impacted fracture in the position in which it has been placed by the accident is necessary for the following reasons:

1. It prevents disengagement of the fragments.

2. It obviates secondary shortening and eversion during the stage of interstitial absorption which attends inflammatory osteoporosis.

3. By keeping the injured parts at rest, it serves as a prophylactic measure against the accession of arthritis and para-arthritis.

4. It enables the patient to leave the bed any time after the dressing has been applied, and thus guards against decubitus, hypostatic pneumonia, and other affections incident to prolonged confinement in bed.

The advantages arising from immediate reduction and permanent fixation in fractures of the neck of the femur are the following:

(a.) The untorn portions of the joint structures are replaced at once into their normal relations; a procedure which cannot fail to influence favorably the circulation in vessels which may have escaped injury.

(b.) The sharp and irregular margins of the broken surfaces act as irritants to the surrounding soft tissues; immediate reduction, by placing the fractured surfaces at once into mutual coaptation, acts as a preventive agent against the supervention of undue inflammation in and around the hip-joint.

(c.) With coaptation the process of repair is initiated at once, the blood and exudation material between the fragments act as a temporary cement substance, and at the same time serve a useful purpose in re-establishing the interrupted circulation.

(d). Perfect reduction and permanent fixation prevent muscular spasm and diminish pain.

My experimental work convinced me so strongly of the not only possibility, but the probability, of obtaining bony union in cases of intra-capsular fractures, provided the fractured surfaces are kept in uninterrupted contact for a sufficiently long time, that I was led to suggest what justly appeared at the time as heroic measures in securing this end. It appeared to me impossible in cases where no impaction had taken place to insure sufficient immobilization of the fragments without some direct means of fixation. I suggested at that time the advisability of immobilizing the lower fragment by means of a sharp steel pin, regulated by a set screw passing through the centre of a curved steel bar, incorporated in the plaster-of-Paris splint over the fenestrum, in such a way that the sharp point of the pin would perforate the soft parts over the centre of the great trochanter, and by penetrating a small distance into the bone, could make the necessary lateral pressure and secure perfect immobility of both fragments. As still a more direct means of fixation of both fragments, I advocated that in some cases it would be justifiable to secure transfixtion of both fragments by an ivory or bone nail which was to be driven through a perforation made with a drill, from the outer surface of the great trochanter through the centre of the neck and well into the head of the bone. The result of my experiments convinced me that this means of fixation answered an admirable purpose in placing the fragments in a position where union by callus could take place. The specimens illustrating this treatment demonstrated that such nails, if aseptic, and in aseptic tissues, are completely removed by absorption during the time required for bony union to take place. These suggestions were dictated by an honest conviction that any less direct measures would fail in accomplishing the desired result. It is only natural that this plan of treatment was objected to as being utterly inapplicable in most cases, and too heroic in all. Clinical experience has since satisfied me that these direct measures are unnecessary, and that the same object can be obtained by well regulated lateral pressure in the direction of the axis of the

femoral neck combined with perfect fixation of the lower fragment upon the pelvis. The influence exercised by impaction in determining the ultimate result in fractures within the capsule of the hip-joint, has been repeatedly alluded to. Many fractures of the femoral neck are kept from becoming displaced for a variable period of time, by interlocking of the denticulated broken surfaces, a condition which has been termed by Bigelow "rabbeting." Believing that the surgeon should imitate the reparative resources of nature wherever it is possible to do so, it occurred to me that artificial rabbeting could be produced in all cases by uninterrupted lateral pressure. It is not difficult to conceive that if the fractured surfaces are placed as accurately as possible in apposition, lateral pressure would effect perfect approximation and a mutual interlocking of the fragments. Lateral pressure thus applied is one of the most efficient means in preventing secondary, lateral and longitudinal displacements. Pressure, to be effective, must be applied in the direction of the broken neck, that is, directly over the trochanter major, and in such a manner as not to interfere with the superficial circulation. Pressure with belts and strips of adhesive plaster encircling the whole pelvis, can exert but little, if any, influence on the fractured bone, at the same time it impedes the superficial circulation. In the more recent cases of fracture of the neck of the femur that have come under my observation, I have pursued the following plan of treatment.

The patient is dressed in well-fitting knit drawers and a thin pair of stockings. For strengthening the plaster-of-Paris dressing over the joints, and at other points where greater strength is required oaken shavings are placed between the layers of plaster, these small thin splints greatly increase the durability of the dressing without adding much to its weight. The bony prominences are protected with cotton before the plaster-of-Paris dressing is applied. The drawers and stockings furnish a more complete and better protection to the skin than roller bandages. Usually about twenty-four plaster-of-Paris bandages are required for a dressing. The fractured limb is first encased in the dressing as far as the middle of the thigh, when the patient is lifted out of bed by two strong persons, the physician supporting the limb so as to prevent disengagement of the fragments if the fracture is impacted, and to guard against additional injuries in non-impacted fractures. The patient is placed in the erect position, standing with his sound leg upon a stool or box about two feet in height; in this position he is supported by a person on each side until the dressing has been applied and the plaster has set. A third person takes care of the fractured limb which is gently supported and immovably held in impacted fractures until permanent fixation has been secured by the dressing. In non-impacted fractures the weight of the fractured limb makes auto-extension which is often quite sufficient to restore the normal length of the limb; if this is not the case, the person who has charge of the limb makes traction until all shortening has been overcome, as far as possible, at the same time holding the limb in a position so that the great toe is on a straight line with the inner margin of the patella and the anterior superior spinous process of the ilium. In applying the plaster-of-Paris bandages over the seat of fracture, a fenestrum, corresponding in size to the dimensions of the compress with which the lateral pressure is to be made, is left open over the great trochanter. To secure perfect immobility at the seat of fracture, it is not only necessary to include in the dressing the fractured limb and the entire pelvis, but it is absolutely necessary to include the opposite limb as far as the knee, and to extend the dressing as far as the cartilage of the eighth rib. The splint, which is represented by figure 1, is incorporated in the plaster-of-Paris

FIGURE 1.

dressing, and must be carefully applied so that the compress composed of a well-cushioned pad, with a stiff unyielding back rests directly upon the trochanter major, and the pressure which is made by a set screw is directed in the axis of the femoral neck. The set screw is projected by a key which is used in regulating the pressure. Lateral pressure is not applied until the plaster has completely set. If the patient is well supported and the fractured limb is held immovably in proper position, but little pain is experienced during the application of the dressing. Syncope should be guarded against by the administration of stimulants. As soon as the plaster has sufficiently hardened to retain the limb in proper position, the patient should be laid upon a smooth, even mattress, without pillows under the head, and in non-impacted fractures the foot is held in a straight position, and extension is kept up until lateral pressure can be applied. The lateral pressure prevents all possibility of disengagement of the fragments in impacted fractures, and in non-impacted fragments it creates a condition resembling impaction by securing accurate apposition and mutual interlocking of the uneven fractured surfaces. No matter how snugly a plaster-of-Paris dressing is applied, as the result of shrinkage in a few days it becomes loose, and

without some means of making lateral pressure it would become necessary to change it from time to time in order to render it efficient. But by incorporating a splint, as shown in figure 1, in the plaster dressing (figure 2) this is obviated, and the lateral pressure is regulated from day to day by moving the set screw, the proximal end of which rests in an oval depression in the center of the pad. From time to time the pad is removed and the skin washed with diluted alcohol for the purpose of guarding against decubitus.

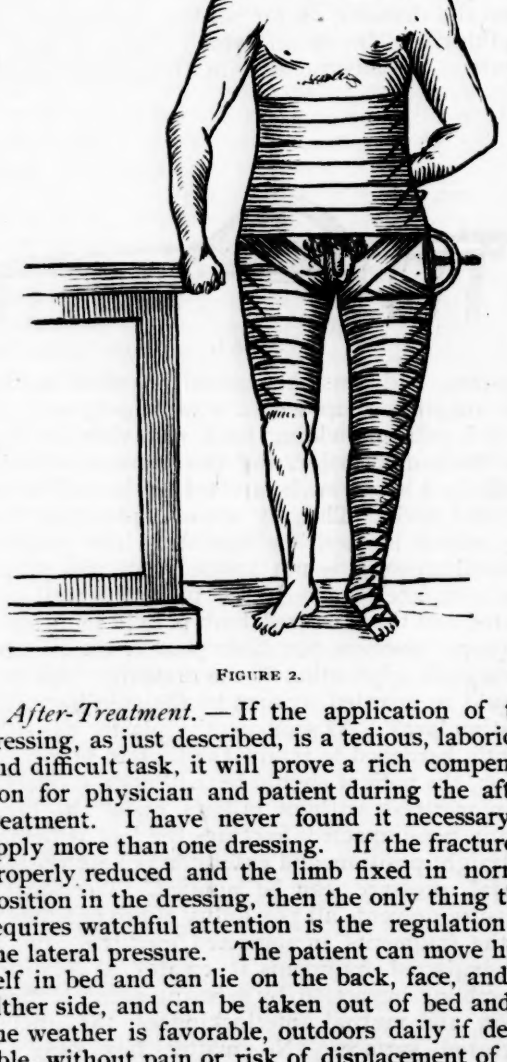

FIGURE 2.

After-Treatment. — If the application of the dressing, as just described, is a tedious, laborious and difficult task, it will prove a rich compensation for physician and patient during the after-treatment. I have never found it necessary to apply more than one dressing. If the fracture is properly reduced and the limb fixed in normal position in the dressing, then the only thing that requires watchful attention is the regulation of the lateral pressure. The patient can move himself in bed and can lie on the back, face, and on either side, and can be taken out of bed and, if the weather is favorable, outdoors daily if desirable, without pain or risk of displacement of the fragments. If necessary, a patient in such a dressing could be transported great distances without any immediate or remote risks. The impunity by which the patient can change his position, the benefits to be derived from outdoor fresh air, are advantages which cannot be obtained by any other treatment, and to them must be attributed an important influence in the prevention of a number of the fatal complications which have so often figured as causes of death in patients suffering from fracture of the femoral neck. If the dressing has been well applied, and more especially if the precaution has been followed to protect the bony prominences with a layer of salicylated cotton, there is little or no danger of the formation of excoriations. At the expiration of eighty to one hundred days, the time required for bony union to take place, the dressing is removed, but the patient should be cautioned not to step on the limb until the end of the fourth or sixth month, when union will be sufficiently firm to sustain the weight of the body. As soon as the dressing is removed passive motion should be made, and the nutrition and function of the limb promoted by massage and, if considerable muscular atrophy is present, the use of the faradic current.

During the last six years the following cases of fracture of the neck of the femur have come under my observation, and were treated by immediate reduction and permanent fixation as detailed in this paper. A number of the cases occurred in the practice of other physicians, and I was only called in to apply the dressing. I desire in this place to express to them my sense of obligation for their permission to use the material in the preparation of this paper.

CASES OF FRACTURE OF THE NECK OF THE FEMUR TREATED BY IMMEDIATE REDUCTION AND PERMANENT FIXATION.

Case 1.—Female, æt. 68, in fair general health, slipped on the sidewalk and fell upon the right hip. The examination made a few hours after the accident revealed a contusion over the trochanter major, some swelling about the region of the hip-joint, limb everted, shortening of 1¼ inch. The displacement of the great trochanter above Roser-Nelaton's line corresponded with the extent of the shortening. No impaction. Crepitus elicited by the slightest movement of the limb. Anatomical diagnosis: Fracture of the neck of the femur partially within and partially without the capsular ligament. In this case reduction was made by placing the patient upon a pelvic rest and making extension. The limb could be brought down to within ¼ inch of its normal length, and in this position, with the foot in proper line, it was fixed in the plaster-of-Paris dressing, and as soon as the plaster had become firm lateral pressure by means of the pad and set-screw was applied. The patient suffered but little pain at any time, and could roll herself in bed from one side to the other with ease. The dressing was removed after three

months, when it was ascertained that bony union had been obtained with ½ inch of shortening and the limb in good position. Passive motion and massage were now made daily and the patient was allowed to walk on crutches. Four months after the accident she was able to walk with the aid of a cane, and three months later she required no further mechanical support. At the end of a year recovery was complete and she could walk nearly as well as before the accident.

Case 2.—Male, æt. 65 years. Patient is somewhat anæmic and presents evidences of senile marasmus. Fell from a ladder a distance of about 6 feet directly upon his left side. No external contusion, and swelling over anterior aspect of hip-joint slight. A number of careful measurements revealed ¾ of an inch of shortening. Foot moderately everted. No impaction. Gentle traction upon the limb and slight rotation produces crepitus. After fractured limb was encased in plaster as far as the knee patient was made to stand with the sound limb upon a stool and was supported on each side by an assistant, while a third person made traction until the shortening was nearly corrected, and with the foot in proper position the fixation dressing was applied. Lateral pressure was applied the next day and was kept up carefully for eighty-five days, when the dressing was removed. A careful examination showed that bony union had taken place, and that the shortening did not exceed ⅓ of an inch. The patient used crutches for six weeks, later a cane for a few months longer, and at the end of a year he walked well without any support and with only a slight limp.

In this case the symptoms after the accident pointed to a fracture of the neck of the femur involving more of the bone within than without the capsular ligament. Only a slight amount of callus could be found behind the posterior margin of the great trochanter.

Case 3.—Female, 58 years old. Senile marasmus well marked. Patient stumbled and then fell on right side. A few hours after accident the right foot was found everted and the limb shortened ⅔ of an inch. No impaction. Right groin considerably swollen. Trochanter major displaced backwards and upwards. Probable seat of fracture partly within and partly without the capsule. Reduction was effected by auto-extension and traction upon the limb. After the limb was immobilized in the dressing the foot was in normal position and apparently little or no shortening. Fixation and lateral pressure were continued for three months. On removal of the dressing the union was found firm with ½ inch of shortening. Patient used crutches for three months. Stiffness in the hip-joint was only overcome by regular active and passive exercise and massage continued for a long time. At the end of eight months the patient was able to take care of her household, and the function of the limb was nearly restored. Measurements made at this time showed that the shortening had not increased.

Case 4.—Male, 50 years old, prematurely old, the result of intemperate habits. Patient slipped and fell on the doorsteps, fracturing the left femoral neck. Considerable swelling at the seat of fracture. Foot strongly everted, shortening 1¼ inches. No impaction. Trochanter major less prominent than on the opposite side and displaced upwards above Roser-Nélaton's line 1¼ inches. No impaction. On making extension and gently rotating the limb crepitus can be distinctly felt. Reduction and immobilization in the usual manner. The second day the patient had an attack of delirium tremens. During the maniacal excitement he tossed himself in every direction and the nurses were kept busy in preventing him from demolishing the dressing. It was during this attack that the fixation dressing and the lateral pressure gave evidence of their efficiency in maintaining uninterrupted coaptation under the most unfavorable circumstances. Under the use of narcotics the patient became rational and quiet on the third day. The dressing had to be repaired in several places. Subsequently the progress of the case was favorable. The dressing was removed after ninety days, when the fracture was found firmly united with nearly an inch of shortening; considerable callus in front of and behind the trochanter. The patient was soon able to walk around on crutches, but I have been unable to obtain any reliable information as to his condition since.

Case 5.—A female, weighing nearly 200 lbs., was thrown out of a buggy and fell upon her left side. After she recovered from the immediate effects of shock she found that she could not use her left leg. Two physicians who examined the patient soon after the injury suspected a dislocation of the hip, but made no attempts at reduction. When I examined her the next day I found marked eversion of the foot, and a number of measurements made showed ½ inch of shortening. The great trochanter had been displaced beyond Roser-Nélaton's line to the same extent, and appeared to be less prominent than on the opposite side. No swelling in the groin or posterior aspect of the hip-joint. On gently rotating the limb the great trochanter described a smaller circle than on the opposite side, and the movements affected the head of the femur. Slight traction had no effect in diminishing the shortening. The diagnosis of intracapsular impacted fracture was based upon these symptoms, and every precaution was exercised not to cause disjunction of the fragments during the examination and the application of the dressing. As I was anxious to maintain the impaction during the required time for bony union to take place, the patient was treated in the same manner as in the

preceding cases, only that no attempts were made to overcome the shortening or to correct the other displacements. Lateral pressure was applied in a line with the axis of the outer portion of the femoral neck for the purpose of maintaining the impaction during the stage of inflammatory osteoporosis. The dressing was not disturbed for three months, when it was removed and the limb was found in the same position as when it was applied. The shortening had not increased. The patient was cautioned not to use the limb for another three months and to depend in walking entirely on crutches. For a long time the movements in the hip-joint were impaired, undoubtedly the result of a traumatic plastic inflammation of the structures of the joint. Passive motion and massage succeeded in restoring the normal functions of the joint. At no time could any callus be felt, which must be considered as another proof that the fracture was intracapsular. At the end of a year the patient walked nearly as well as before the accident.

Case 6.—A man, 65 years of age, slipped on an icy sidewalk and fell in such a manner that the right femoral neck was fractured. A few hours after the accident a considerable swelling had formed in the groin. Contusion over the great trochanter; eversion so marked that the outer margin of the foot rested on the mattress. Shortening 1½ inch. No impaction. Crepitus on slightest motion of limb. Diagnosis non-impacted extracapsular fracture of the neck of the femur. Reduction was accomplished by auto-extension and traction on the limb. Fixation by means of plaster-of-Paris dressing and lateral pressure. Patient was relieved of pain as soon as the dressing had been applied and remained in good health during the entire treatment, which was continued for seventy-five days, when the dressing was removed. Bony union with ¾ of an inch of shortening. A large mass of callus on each side of the great trochanter could be distinctly felt. Crutches were used for four months. At the end of a year walked without any support and with only a slight limp.

Case 7.—A strong, healthy blacksmith was thrown from a buggy which was upset by an unruly horse. He fell in such a manner that his full weight came upon the right hip. Immediately after the fall he found that he was unable to use the right leg. He was conveyed in a carriage to his home some three miles distant, and examination two hours later revealed the following: superficial abrasion of skin over the great trochanter; marked eversion of foot. Shortening 1½ inches; tip of trochanter some distance above Roser-Nélaton's line; right femur 17¼, and left femur 17⅛ inches in length. Crepitus on extension and rotation of the limb inwards. New point of motion at seat of fracture very evident. Pain is referred to point immediately behind the great trochanter. Considerable swelling in the groin and behind the great trochanter. The injury was diagnosticated as an extracapsular non-impacted fracture. Reduction by auto-extension was made on the third day and the fracture immobilized by plaster-of-Paris dressing in which the splint was incorporated for making lateral pressure. Patient suffered but little pain after the dressing was applied. The dressing was not removed for twelve weeks, when a large mass of callus was found behind and in front of the great trochanter, which for quite a long time seemed to impair the movements of the joint. With the disappearance of the callus the functional result improved. The fracture healed by bony consolidation with an inch of shortening. In six months he dispensed entirely with the use of crutches, and with a high sole on right boot to make up for the shortening of the limb he walks with only a very slight limp. In twelve months he was able to attend to his business, even to horse-shoeing, and has since, aside from the slight lameness, suffered no inconvenience from the accident.

Case 8.—An invalid lady, 61 years old, while descending three low steps caught the left heel in the skirt of her dress and fell, striking on the left hip. Examination soon after revealed the following *status præsens:* Dark blue discoloration of skin over the outer and posterior aspect of the great trochanter and from 2 to 3 inches below the hip-joint indicates the point where the fracturing force was applied. Slight eversion of foot. No swelling in groin or posterior aspect of hip-joint. Tip of great trochanter ½ inch above Roser-Nélaton's line. On making measurements from anterior superior spine of the ilium to the internal malleolus no shortening could be detected, but the apparent discrepancy between the result obtained by these measurements and the Roser-Nélaton's test-line was subsequently explained by the other measurements, which showed asymmetry of the femora, the femur on the injured side being ½ inch longer than its fellow on the opposite side. Left trochanter rotates on a shorter radius of a circle than the right. Pain in the hip increased by pressure over the great trochanter. Patient is able to elevate the limb about 2 feet from the bed, but all such efforts aggravate the pain. The symptoms in this case, as well as the manner in which the injury occurred, pointed directly to an impacted intracapsular fracture of the neck of the femur. In order to secure the benefits of long continued impaction during the process of repair immobilization of the fracture was secured by a plaster-of-Paris dressing and splint for lateral pressure. The general condition of the patient was not impaired by this kind of treatment of the fracture, and when the dressing was removed eight weeks after its application the limb was found in the same position as after the accident. The patient was directed to rely on crutch-

es for a number of weeks and then to use the limb cautiously. At the end of five months she could walk without a cane and with an almost imperceptible limp.

The treatment I have described I recommend for adoption in all cases where there is a reasonable hope that by it a bony union of the fracture will be obtained. It is superfluous to remark that it is not applicable in all cases of fracture of the femoral neck, and is positively contraindicated in cases of extreme obesity and debility, and in patients suffering from concomitant diseases which in themselves would lead to a fatal termination.

CONCLUSIONS.

1. From a scientific, prognostic and practical standpoint it is not necessary to make a distinction between intra- and extra-capsular fractures of the neck of the femur.

2. An impacted fracture of the neck of the femur will unite by bony union, provided the impaction is not disturbed and is maintained by appropriate treatment for a sufficient length of time for the fragments to become united by callus.

3. Impacted fractures of the neck of the femur should be treated by a fixation dressing consisting of a plaster-of-Paris case, including the fractured limb, the pelvis and the opposite limb as far as the knee, in which a splint should be incorporated by which lateral pressure can be secured in the direction of the axis of the broken femoral neck.

4. Unimpacted fractures of the neck of the femur, both intra- and extra-capsular, should be treated by immediate reduction and permanent fixation, so as to place the fragments in the same favorable condition during the process of repair as in impacted fractures.

5. Reduction is effected most readily by autoextension and traction upon the fractured limb with the patient in the erect position, resting his weight upon the sound limb.

6. The fixation dressing should not be removed and the lateral pressure should not be discontinued for from ten to twelve weeks, the shortest space of time required for bony union to take place.

7. Patients who have sustained a fracture of the neck of the femur should not be allowed to use the fractured limb earlier than four to six months after the accident, for fear of establishing a pseudo-arthrosis at the seat of fracture.

8. The functional result is greatly improved by passive motion, massage, and the use of the faradic current.

EUCALYPTOL IN HEADACHE.—Dr. M. J. Lewis states, in the *Medical News*, that eucalyptol, in doses of 5 grs., six times daily, is useful in headaches, particularly those of a congestive character.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

EIGHTH PAPER.

CAUSATION: PREDISPOSING INFLUENCES.

(*Concluded from page 53.*)

Cold[1] has long been recognized as one of the most energetic of the predisposing causes of pneumonic fever, although the proposition has been denied by some.[2] I have myself no doubt regarding the predisposing influence of exposure to cold and wet in the causation of the disease, and it is to this I attribute the preponderance of persons attacked whose habits and occupations lead to such exposure.

It was the impression of Laennec[3] that cold, as a cause of pneumonic fever, was much less active when it temporarily followed excessive heat.

Thus "the Russian who rolls himself in the snow after coming out of the hot bath, or the baker who goes from his heated oven, almost naked, into an atmosphere below zero, is not liable to attacks of this disease."

I may add that I have seen iron and lead smelters, working in a superheated atmosphere, plunge, when heated and perspiring, into cold water, and they claim to be not more liable than others to attacks of this malady.

Exposure to cold is especially apt to be followed by pneumonic fever if the subject is depressed by

[1] Williams, Lancet, N. Y., 1862, Vol. ii, p. 3; Rindfleisch, Path. Histol., Philadelphia, 1872, p. 423; Patton, Jour. Am. Med. Ass'n, Oct. 16, 1886, p. 425; Hourmann et Dechambre, Arch. Gén. de Méd., T. xii, p. 29; Cruvielhier, Anat. Pathol.; Fox, op. cit., p. 158; Pinel, Nosol. Phil., T. ii, p. 163; Heidenhain, Virchow's Archiv., Bd. lxx, Howard, N. C. Med. Jour., Feb. and Oct., 1859, and Jan. and Mar., 1860; Bateman, Dis. London, 1819, p. 234; Schützenberger, Gaz. Méd. de Strassb., 1856, No. 2; Rigler, Wiener med. Wochenschr., 1858, S. 834; DeBordes, Nederl. Weekbl. voor Geneesk., 1855, Nr. 22; Warfwinge, Am. Jour. Med. Sci., Jan., 1883, p. 261; Juergensen, Ziemssen's Handb., Bd. v, S. 14; Niemeyer, Spec. Path. u. Therap.; Thompson, Epidem. Catarrh, p. 109; Storer, Sanitarian, April 19, 1883; Green, Quain's Dic. Med., p. 874; Reuhle, Berliner, k. Wochenschr., 1884, S. 228; Flourens, Jour. de Méd. Prat., August, 1829; Ziemssen, op. cit., S. 159; Hertz, Ziemssen's Handb., Bd. v, S. 360; Huss, op. cit., S. 68; Lebert, Klinik. d. Brustk., Tüb., 1874, Bd. i, S. 698; Frank, op. cit.; Campet, Mal. des Pays Chauds, p. 210; Chomel, loc. cit., S. 322; Corney, Lancet, 1884, Vol. i, p. 810; Remy, Arch. Gén. de Méd., Mar., 1883; Colles, U. S. Naval Rpts., 1881, p. 415; Bouillaud, Dic. de Méd., T. xiii, p. 359; Davis, Rpt. Mich. Bd. Health, 1880, p. 450; Rogers, U. S. Naval Rpts., 1881, p. 471; Hildebrand, Med. Prac., Vol. iii, p. 194; Grisölle, op. cit., p. 147; Laennec, op. cit., p. 225; Swett, op. cit., p. 80; Hermann, Lungenentz., S. 4; Andral, op. cit., p. 284; Rilliet et. Barthez, Mal. des Enfants, T. i, p. 115; Pinel et Richeteau, Dic. de Méd., T. xliii, p. 396; La-Roche, op. cit., p. 347; Monro, Path. Anat., Vol. ii, p. 247; Wood, Prac. Med., Vol. ii, p. 42; Brunton, Brit. Med. Jour., 1875, Vol. i, p. 204; Bristowe, Lancet, 1884, Vol. i, p. 382, Peter, Bull. de l'Acad. de Méd., 1883; Stedman, Boston Med. and Surg. Jour., Oct. 9, 1881, p. 507; Tessier, Bull. de l'Acad. de Méd., 1883; Bossbach u. Aschenbrandt, Med. Chir. Rundschau, Wien, 1882, S. 51; Sée, Bull. de l'Acad. de Méd., 1883; Bolles, Boston Med. and Surg. Jour., Nov. 20, 1879, p. 736; London Lancet, 1881, Vol. ii, p. 148; Lawson, Edinb. Med. and Surg. Jour., Vol. lxii, p. 50; Snow, Boston Med. and Surg. Jour., Feb. 24, 1876, p. 225; Bondet, Bull. de l'Acad. de Méd., 1883; Despartes, Mal. de St. Domingo, T. i, p. 32; Mattocks, Boston Med. and Surg. Jour., May 24, 1876, p. 527; Baker, N. Y. Med. Rec., Sept. 10, 1887, p. 315; Drake, Fevers, Phila., 1854, p. 799; Flint, Prac. Med., 1868, p. 182; Watson, Prac. Phys., 1845, p. 73; Hirsch, op. cit., S. 32; Heiss, Inaug. Diss., München, 1857, p. 20; Jaccoud, La France Méd., 1887.

[2] Sanders, Am. Jour. Med. Sci., July, 1882, p. 91; Colin, Traité des Mal. Epidem., Paris, 1879, p. 440; Laveran, Mal. des Armeés, Paris, 1875, p. 49; Baümler, Berliner klinische Wochenschr., 1884, S. 288; Purjesz, Wiener med. Wochenschr., 1884, S. 43; Sée, L'Union Méd., Nov. 29, 1884.

[3] Op. cit., p. 225; see also Watson, op. cit., p. 71.

hardships, want, despair, hunger debility, intoxication, etc. There are very few physicians who have not met with the disease in patients who had been exposed to cold after a debauch.

My experience has furnished a number of instances in which unusual exposure to cold and wet has been followed by an attack of pneumonic fever.

Many years ago, whilst as yet an undergraduate, I spent a few days in a small village in which was progressing a religious revival under the auspices of ministers who deemed baptism by immersion a necessary prerequisite for admission into the church. The weather was very cold and ice of several inches' thickness covered all the streams, nevertheless many embraced religion and were baptized, holes having been cut in the ice for that purpose. After the ceremony the hapless victims stood about, in their dripping and freezing garments, for a considerable time previous to their departure for their homes, which lay, in some instances, at quite a long distance. Being a stranger in the community, and having preserved no notes, I am unable to state either the number of persons immersed or the proportion subsequently attacked with pneumonic fever; suffice it to say that the number of those who sickened was so great as to be a matter of common mention in the community and to lead to the adjournment of the meetings until the weather should have become warmer.

In the summer of 1880 a farmer was exposed, whilst overheated and perspiring, to a shower of cold rain and hail. He felt chilly at once, became drowsy, and a few hours later had a profound chill followed by pneumonic fever.

Another man lay for several hours upon the wet and cold ground and was promptly attacked by the same disease.

Instances similar to these might be multiplied from my own records and from the published observations of others.[4]

Hertz[5] considers the drinking of cold fluids at a time when the body is very warm a fruitful source of pulmonary congestions and inflammations, and I have met with several cases which seem to uphold this view.[6] Cold baths, under like circumstances, are accompanied by similar dangers.[7]

A rheumatic patient, with high temperature, was treated by immersion in a cold bath. Pneumonic fever developed at once.[8]

A girl was given three cold baths on the twenty-first day of an attack of typhoid fever. Fatal pneumonic fever developed during the night.[9]

A manufacturer, aged 40, ill with typhoid fever, was given a cold wet pack of two hours' duration, and was immediately attacked by pneumonic fever.[10]

The loss to the army of Alexander the Great, after their plunge into the river Oxus while the men were thirsty, fatigued and perspiring after a march of forty-six miles across the scorching sands of the desert, was greater than from any of its battles.[11]

Although every writer[12] upon pneumonic fever is sure to mention cold as one of the predisposing (or active) causes of the disease, yet few have essayed to explain its action. The first effect of refrigeration upon the respiratory mucous membrane is to greatly contract the blood-vessels—rendering the surface pale and causing a sensation as if the lungs were torn asunder. This contraction is only temporary, the vessels gradually regaining their normal dimensions, and finally becoming greatly dilated, the color of the mucosa passing through all the shades of red, from pink to purple. The normal bronchial secretion is greatly diminished or suppressed with the contraction of the capillaries, but as these dilate it is restored and finally becomes excessive.[13] How much of this effect is due to refrigerating shock and how much to the abstraction of moisture from, and the deposition of chloride of sodium upon, the walls of the air-cells and minute bronchi is not definitely known. We know that the air of a zero temperature is very dry as it enters the lungs, containing only ½ grain of aqueous vapor to the cubic foot, whilst the expired air from the lungs, at a temperature of 98° F., is nearly or quite saturated with moisture and contains about 18½ grains of vapor of water—18 of which have been abstracted from the mucous surfaces with which it has come in contact.[14] This moisture is necessarily taken from the blood, and as it leaves the circulation holds in solution certain salts, especially sodium chloride, which are non-volatile and are left behind to irritate the mucous surfaces[15] or afford a pabulum for the growth of infective germs.

In regard to the influence of fogs and cold damp air in the production of the malady, it has been suggested that the lungs may be greatly chilled by the abstraction of the heat necessary to convert into vapor the minute particles of water contained in such an atmosphere.

There is a very close connection between night air and pneumonic fever, as is shown by the numbers of cases following exposure to its influences, and the vast majority of instances in which the attack commences during the hours of the night. The preference which this disease shows toward attacking its victims at night has led some observers to attribute to ozone, which is then present

4 Ziemssen, op. cit., S. 159; and many others.
5 Op. cit., S. 360.
6 See Andral's—op. cit., p. 169—forty-second case.
7 Peter, Bull. de l'Acad. de Méd., 1883; Sée, Ibid; Bristowe's Lancet, 1884, Vol. i, p. 382; Bondet, op. cit.
8 Carter, London Lancet, N. Y., 1881, Vol. ii, p, 148.
9 Stedman, Boston Med. and Surg. Jour., Oct. 9, 1879, p. 507.
10 Bolles, Boston Med. and Surg. Jour., Nov. 20, 1879, p. 736.
11 Quintius Curtius; Diodorus.
12 Brunton, Brit. Med. Jour., Feb. 13, 1875.
13 Rossbach u. Aschenbrandt, Med. Chir. Rundsch., 1882, S. 51.
14 Baker, N. Y. Med. Rec., Sept. 10, 1887, p. 315.
15 This is not accepted by Seibert, Berlin. k. Wochenschr., 1887.

in its maximum proportion, a causative relation to it.[16]

EXCITING CAUSE.

Formerly, in a large proportion of cases,[17] the attack could not be referred to any obvious cause, and from this circumstance pneumonic fever is often said to be of spontaneous origin.[18] That this conclusion is erroneous requires no argument. That there can be no effect without an adequate cause is an axiom of universal applicability, and it is no more reasonable to adopt the *de novo* origin of diseases, than to acknowledge the same doctrine of the origin of life or of matter. The term, unless used in a very restricted sense, should be expunged from medical writings. Not only must a given and unique effect proceed from an adequate cause, but such cause must be specific in its nature.

In the case of pneumonic fever we have a series of phenomena which, within certain limits, are unvarying, and which necessarily require for their production a single cause; of varying potency, infectious[19] certainly and possibly contagious,[20] but always unchangeable in its nature. This specific *materies morbi* may be actively destructive, or it may be an agent acting by its mere presence—catalysis—and much research has been expended in the endeavor to discover and isolate it. To-day it is generally acknowledged that the poison[21] must be a microscopic vegetable parasite. The acceptance of this proposition does not necessarily require the demonstration of the infectious material, for in this instance, as in so many others in nature, its existence is manifested and proven by its effects, both objective and subjective.

From the fact that pneumonic fever is ubiquitous we may infer that its essential cause is ever present[22] in the atmosphere we breathe, and necessarily in the lungs, but that its onslaughts are successfully repelled, until a time when, through a variety of circumstances, the system can no longer cope with the enemy and capitulates—a victim. This ready susceptibility of the system may follow some marked change in the subject or his surroundings, *e. g.*, becoming chilled from facing an east wind, or the conditions may not attract attention.

With the entrance into the system of this exciting cause there usually arises in some portion of the lungs, and possibly in some other organs,[23] an irritation which attracts an increased blood supply to the part and causes the exudation into the alveoli and connective tissue of certain constituents of the blood. The entrance of these germs into the system is not always and of necessity followed by an attack of the disease. It has been shown that when certain microörganisms enter the systemic circulation they are immediately surrounded and destroyed[24] and the débris is quickly extruded from the economy by the excretory organs It is probable that this destructive digestion is favored by certain conditions of both the leucocytes and disease germs.[25]

Various living vegetable formations are found in the exudation which fills the alveoli, in the secretions from the bronchial mucous membrane, in the substance of the inflamed tissues and in other parts of the body. That these organisms, although microscopic in size, have a very definite and intimate relationship to the pneumonic process is certain, and by a majority of pathologists[26] they are recognized as the *causa vera* of the disease, whilst others consider them only the scavengers of the malady, and yet another small contingent[27] think their presence accidental and in no wise essential.

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[16] Baker, Proc. Mich. Bd. Health, Oct. 1, 1886.

[17] Flint, Prac. Med, 1868, p. 182; Fox, Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 157; Green, Quain's Dic. Med., p. 874; Swett, Dis. Chest, p. 79; Ziemssen, Pleuritis u. Pneumonie, 1862; Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343.

[18] Flint, op. cit.

[19] Bermann, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Flint, N. Y. Med. Rec., July 14, 1877; Hirsch, Handb. d. Hist. u. Geog. Path., Erlangen, 1864, Bd. ii, S. 26; Moore, N. Y. Med. Rec., Sept. 10, 1887, p. 314; Sée, Am. Jour. Med. Sci., Jan., 1885, p. 261; Virchow, Berliner k. Wochenschr., 1888, S. 113; Kühn, Arch. f. k. Med., 1887; Gieke, N. Y. Med. Rec., Sept. 10, 1887; Heidenhain, Virchow's Archiv., Bd. lxx, 1877; Virchow, Berliner k. Wochenschr., Feb. 6, 1888, S. 113; and many others.

[20] Blythe, London Lancet, 1875; Coulthard, Cincinnati Lancet and Clinic, April 14, 1883, p. 353; Cullen, Prac. Physic., Phila., 1792, Vol. i, p. 182; Daly, Lancet, 1881, Vol. ii, p. 824; Krebs, Arch. f. Expm. Path., Bd. iv, S. 420; Bryson, Lancet, N. Y., 1864, Vol. i, p. 198; Fischer, N. Y. Med. Rec., July 28, 1888, p. 93; Netter, Arch. Gen. de Méd., Juillet, 1888; Morgagni, De Caus. et Sed. Morb., Ep. xxi, art. 26; Walton, U. S. Naval Rpts., 1879, p. 67; London Lancet, 1877, Vol, ii, p. 324; 1878, Vol. ii, p. 266; 1881, Vol. ii, p. 824; 1882, Vol. i, p. 139; Rosse, Cruise of the Corwin, Wash., 1883, p. 16; St. Louis Med. and Surg. Jour., Dec., 1878, p. 350; Marriner, Lancet, 1882, Vol. ii, p. 237; Neal, Med. Digest, Sec. 667, 3; Kühne, Berliner k. Wochenschr., 1888, S. 337; Sturges, Pneumonia, p. 6; Wyman, Boston Med. and Surg. Jour., Dec. 15, 1881, p. 569; Bielinski Medycyna, 1882; et. al.

[21] I here use the word "poison" in its broadest sense.

[22] In greater or less quantity, in various stages of development and of variable potentiality.

[23] Koch, Imp. Bd. Health Rpt., 1881; Eberth, Arch. f. k. Med., Bd. xxviii; Smith, N. Y. Med. Rec., May 14, 1887, p. 543; Leyden, Deutsche med. Woch., April 4, 1883; Frænkel, Ibid, Nov. 13, 1886; Pollock, Lancet, N. Y., 1883, Vol. ii, p. 101; Juergensen, Berliner k. Wochenschr., 1884, S. 270; Pushkareff, Ejenedelnais Klin. Gaz., April 21, 1885.

[24] By a process of digestion.

[25] For further information see Metschnikoff, Virchow's Arch., 1884, Bd. xcvi, S. 177, and Bd. xcvii, S. 502; Morris, N. Y. Med. Rec., June 4, 1887, p. 629.

[26] Marriner, Lancet, 1882, Vol. ii, p. 237; Geike, Trans. Int. Med. Cong., Wash., 1887; Fränkel, Berliner k. Wochenschr., 1884, S. 271; Bond, Lancet, 1887, Vol. ii, p. 511; Moore, N. Y. Med. Rec., Sept. 10, 1887. p. 314; Leyden, Deutsche med. Wochenschr., April 4, 1883; Smith, N. Y. Med. Rec., May 14, 1887, p. 543; Jones, Jour. Am. Med Ass'n, July 31, 1886, p. 114; Koch, op. cit.; Pollock, Lancet. N. Y., 1883, Vol. ii, p. 101; Didima, N. Y. Med. Rec., Sept. 10, 1887. p. 294; Friedlander, Fortschritte der Med.; Sée, L'Union Méd., Nov. 29, 1884; Lester, Trans. Int. Med. Cong., Wash., 1887; Pushkareff, op. cit.; Shakespeare, Jour. Am. Med. Ass'n, Apr. 30, 1887, p. 478; Senger, Arch. f. Exp. Path., 1886, S. 519; Juergensen, Berliner klin. Wochenschr., 1884, S. 270; Smith, Brit. Med. Jour., July 1883; Garland, Pleurisy and Pneumonia 1888; Spiner and Stricker, Tuberculosis, etc., Wien, 1883; Klebs, Arch. f. Exp. Path., Bd. iv, S. 420; Kühn, Arch. f. k. Med., 1887; Griffin and Cambria, Giornal Int. d. Scien. Med., iv, 5-6; Talamon, Bull. de la Soc., de l'Anat., Nov. 30, 1883; Nauwerck, quoted by Juergensen, op. cit.; Netter, Arch. Gén. Méd., Juillet, 1888; Koch, Centralbl. f. Chir., 1887; Formad, Jour. Am. Med. Ass'n, Apr. 26, 1884, p. 454; Frobenius, Berlin. K. Wochenschr., 1884, S. 16; Whittaker, Jour. Am. Med. Ass'n, May 15, 1886, p. 538; Brenda, Berliner k. Wochenschr., 1884, S. 221; Jacob, Lancet, 1884, Vol. i, p. 758; Scott, N. Y. Med. Rec., Sept. 10, 1887, p. 294; Bermann, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Afanasieff, Lancet, 1887, Vol. ii, p. 1131; Garré, N. Y. Med. Rec., Dec. 17, 1887, p. 764; Perret, Lyon Méd., 1887; Weichselbaum, Edinb. Med. Jour., 1887; Welch, Jour. Am. Med. Ass'n, 1888; Semmola, Trans. Int. Med. Cong., Wash., 1887; Thaon, Rev. des Mal. de l'Enf., Feb., 1886; Lebashoff, Lancet, 1886, Vol. i; Aufrecht, Deutsche Med. Zeit., Jan. 8, 1885; Prudden, N. Y. Med. Rec., Mar. 7, 1885, p. 273; Emmerich, Sanitary News, Nov. 12, 1887; et. al.

[27] King, Jour. Am. Med. Ass'n, Aug. 14, 1886, p. 185; Claxton, Phila. Med. Times, June 17, 1882; Sternberg, Am. Jour. Med. Sci.,

Of these various organisms the one simultaneously discovered by Talamon and Friedländer, and known by the name of the pneumococcus, has attracted the most attention. It is an elliptical micrococcus, in length three times its thickness, found singly, in chains, spread out in a film or grouped in masses. It is surrounded by a capsule which does not stain[28] readily, and which disappears during cultivation, but reappears again when inoculated in an animal. It grows readily on gelatine at ordinary temperatures without liquefying the gelatine. When the inoculations in the gelatine have been made by a needle and to a considerable depth the resulting growth assumes a nail-shape, with an elevated and spreading head.

Originally Friedländer claimed that the peculiar mucinous capsule was the distinctive portion of the organism, but this has been denied by others, who contend that the encapsulated appearance witnessed by Friedländer was due to his method of preparation. Talamon made no mention of it in his original paper, and Friedländer himself, before his death, acknowledged that the capsule was not an important part.

Repeated cultivation changes its form so that it resembles a bacillus. Its vitality is destroyed by a temperature of 136.4° F.[29] It will not grow in a medium impregnated with the bacillus fluorescens putridus or its products, but the reverse does not hold good.[30]

They are most abundant in the exudation matter filling the alveoli and in the bronchial secrecretions, but may also be found in the interstitial tissue, lymphatics, pleura, brain, kidneys and other organs.[31]

Other microörganisms may, because of their near resemblance, be mistaken for the pneumococcus. This is true of the micrococcus of erysipelas,[32] the bacillus of whooping-cough,[33] the micrococcus of cerebro-spinal meningitis,[34] and one of the micrococci usually found in the buccal cavity.[35]

The micrococcus of Friedländer[36] and Talamon[37] through a number of different kinds of animals? has been isolated by repeated cultivations and various animals, such as dogs, mice, rabbits, etc., have been inoculated with the pure cultures, with the result of inducing a pneumonic inflammation which is regarded as being that of veritable pneumonic fever,[38] and identical with that caused by inoculating pneumonic sputum and exudation matter. Whether these toxic effects are due to the direct action of the microörganisms or to the noxious and decomposed elements—ptomaines—which they produce is, as yet, not certainly known.[39]

Other microörganisms are found in the inflamed tissues of pneumonic fever, and some of these have been presumed to be the cause by their discoveries. Thus so long ago as 1877 Klebs[40] described a microbe—the monas pulmonale—which he considered the essential element in the causation of the disease, and his observations were later confirmed by Eberth[41] and Koch.[42]

Fränkel[43] and Talamon[44] describe a microbe which is lanceolate, with a capsule which disappears by cultivation, and which requires for its development a temperature somewhat above that of ordinary rooms. It is not certain that the microbes described by Friedländer, Fränkel and Talamon are distinct organisms.

Microörganisms peculiar to other diseases may be found, incidentally, in cases of pneumonic fever.[45]

These facts very naturally lead up to the question of the contagiousness of pneumonic fever. That there is a contagious element in the causation of this disease has been affirmed for a long time, although the fact has not been demonstrated.

If the occurrence of multiple cases amongst people who commingle together can be accepted as proof positive of contagion, it would be easy and quite convenient to answer this question in the affirmative. Under such circumstances, however, it has not yet been proven that the patients have not been exposed to a common cause, as owing to the universal presence of the disease, is most probable. To be sure there are numerous instances on record where, after assiduous attendance upon pneumonic patients, the nurse has been attacked by the same disease.

Blythe[46] reports two such examples: "A farmer at Bow, North Devon, was affected with acute

July, 1885, p. 106; Salvioli, Arch. le Scienze Med., 1884, Vol. viii, p. 127; Purjesz, Wiener med. Wochenschr., 1884, S. 43.

[28] Staining fluid: Alcohol, 50; distilled water, 100; acetic acid, 10; sol. gentian violet, q.s. Immerse the specimen for 24 hours. Bleach in solution of acetic acid—0.1 per cent.—for one or two minutes. Dehydrate with alcohol and clear up with oil of cloves.

For further information consult Hueppe, Die Formen der Bakterien, Wiesbaden, 1886; DeBarry, Bacteria, N. Y., 1887; Crookshank, Bacteriology, N. Y., 1887; Satterthwaite, Bacteriology, Detroit, 1887; Fränkel, Bakterienk., Berlin, 1887.

[29] The degree of heat required to kill the germs of some other diseases is as follows:

Cholera bacillus of Koch	125.6° F.
Anthrax bacillus	129.2 "
Streptococcus erysipelas	129.2 "
Typhoid bacillus	132.8 "
Streptococcus pyogenes aureus	136.4 "
Micrococcus Pasteurii	140.0 "
Tubercle bacillus	212.0 "

[30] Garré, N. Y. Med. Rec., Dec. 17, 1887, p. 764.

[31] Klein, Microörganisms and Disease, London, 1884; Salvioli, Natura infettiva allu pulmonite croupale, 1884.

[32] Leyden, Deutsche med. Wochenschr., April 4, 1883.

[33] Afariasieff, Lancet, 1887, Vol. ii, p. 1131.

[34] Smith, N. Y. Med. Rec., May 14, 1887, p. 543.

[35] Pasteur, Compt. Rend. Acad. de Sci., 1881, T. xcii, p. 159; Klein, Microörganisms and Disease, London, 1885; Claxton, op. cit.; Fränkel, Berliner klin. Wochenschr., 1884, S. 271; Sternberg, Am. Jour. Med. Sci., July, 1885, p. 106; Salvioli, op. cit.

[36] Op. cit.

[37] Op. cit.

[38] Whittaker, Jour. Am. Med. Ass'n, May 15, 1886, p. 538; et. al.

[39] For further information consult Semmola, Jour. Am. Med. Ass'n, Oct. 8, 1887; Burdon-Sanderson, Brit. Med. Jour., July 14, 1877; London Lancet, 1887, Vol. ii, p. 927; Sternberg, Phila. Med. Times, Vol. xii, p. 386; Shakespeare, Jour. Am. Med. Ass'n, April 30, 1887, p. 478.

[40] Arch. f. Expmt. Path., 1877.

[41] Arch. f. k. Med., Bd. xxviii.

[42] Op. cit. [43] Op. cit. [44] Op. cit.

[45] See Smith, Brit. Med. Jour., July, 1883; Spina and Stricker, Tuberculose, Wien, 1883; Shakespeare, Jour. Am. Med. Ass'n, Apr. 30, 1887, p. 478.

[46] London Lancet, 1875.

pneumonia, and was nursed during his illness by his niece. His niece became affected by the same disease and carried it to her husband. In another case, an old man, affected with pneumonia, reposed on an affectionate relative's breast during a great part of his fatal illness. The relative was very shortly affected by the same ailment."

Wyman[47] relates the history of a woman who died from pneumonic fever contracted whilst nursing her 9-year-old son who was ill with the same disease.

Daly[48] cites the case of a man who nursed his wife during a fatal attack of pneumonic fever, and himself succumbed to the same malady a week later.

Coulthard[49] reports the case of a large fleshy woman of 73 years, who died from pneumonia fever after four days' illness. Two days after her death her husband, of the same age, was also taken with the same disease and also died in four days. In both the right side was affected.

To these I might add several cases coming under my immediate observation, but will give only one: A gentleman, æt. 69, whom I had previously treated three times for pneumonic fever, died in his fourth attack. His wife, a large fleshy woman, æt. 79, who nursed him, also took the disease and died. They expired within forty minutes of each other—he on the ninth, and she on the fifth day of illness. The husband seemed in a fair way of recovering until he was informed that his wife would probably die, after which his courage and desire for life forsook him and he died forty minutes before her.[50]

In discussing this subject the limit to the meaning to be attached to the term contagion should be clearly understood. For a plausible explanation of the cases above detailed, we must acknowledge that they did not arise from accidental or common causes, but that there were present influences which acted upon the pneumonic poison in such a manner as to render it especially abundant or virulent, or that some local influences caused the patients to be pecularly susceptible to the morbid agent, or a combination of both. Now if we employ the term contagion in its broad and original sense these cases would all be contagious, but if we limit our meaning of the word, as is now usual, to infection by a materies morbi which has been first passed through and elaborated in the system of some other patient laboring under the same malady, the conclusion that pneumonic fever is a contagious disease is open to so much doubt that we must await further and more conclusive evidence before it can be accepted.

[47] Boston, Med. and Surg. Jour., Dec. 15, 1881, p. 569.
[48] Op. cit., p. 824.
[49] Cincinnati Lancet and Clinic, April 14, 1883, p. 353.
[50] For further information consult Gairdner, London Lancet, 1887, Vol. ii, p. 247; Smith, N. Y. Med. Rec., Feb. 21, 1885, p. 208; Neal, London Med. Rec., Jan. 15, 1882, p. 14; Martin, Trans. Acad. Med., Ireland, Vol. iv, 1886; Chomel, Pneumonie, 1841; Sée, Cin. Lancet and Clinic, Oct. 28, 1882, p. 421; Kühn, Arch. f. klin. Med., Bd. xxi, Heft 4; Rosse, Cruise of the Corwin, Washington, 1883; Sturges, Nat. Hist. of Pneumonia, London, 1876; Ozanam, Hist. Méd. des Mal. Epidem., Paris, 1817, T. iv, p. 76; Hecker, Epidemics of the Middle Ages, London, 1844, p. 20; Bryson, London Lancet, N. Y., 1864, Vol. i, p. 198; Cullen, Prac. Phys., Phila., 1792, Vol. i, p. 182; Juergensen, Ziemssen's Handb., Bd. v, S. 56.

MEDICAL PROGRESS.

On the Influence of Aniline and of the Toluidines on the Respiratory Capacity of the Blood, and on the Temperature.—In an article in *C. R. Soc. de Biologie*, Jan. 5, 1889, p. 10, E. Wertheimer and E. Meyer publish the results of experiments which show that chloride of aniline and of toluidine injected into the veins of a dog (30 centigr. per kilo. animal) cause within a few minutes an abundant transformation of hæmoglobin into methæmoglobin (proven spectroscopically). Also in vitro methæmoglobin originates very rapidly in the blood after introducing aniline or toluidine. These substances produce in the dog a moderate decrease of carbonic acid in the blood and considerable decrease of oxygen. The latter is for aniline (7.3 instead of 23.1 vol. per cent.), and for metatoluidine (6.8 instead of 20.4 per cent. o), much more considerable than for paratoluidine (13.5 instead of 23.1 per cent. o), or for orthotoluidine (15.1 instead of 24.2 per cent. o). Also the decrease of temperature effected is much greater for the two former substances (from 39° down to 32° and 30° within from five to six hours) than for para- and orthotoluidine (from 39° down to 37° or 36°).

The authors mention also the experiments of Jaffé and Hilger (*Zeitsch. f. Physiol. Chemie*, 1888), which showed a strong temperature lowering effect in metacetotoluidine, whilst para- and orthoacetotoluidine do not influence the temperature.—*Centralblatt für Physiologie*, No. 3, 1889.

On the Treatment of Hydrocele.—A. E. Hind, F.R.C.S., in the *Lancet* says: The treatment of hydrocele of the testis by injection of solution of perchloride of mercury was discussed, I believe, in the medical journals some years ago, but has not yet received the attention it deserves. In my hands it has always given complete satisfaction, but my cases have only been a limited number. I use a solution three times the strength of liquor hydrag. perchlor., and first draw off the hydrocele fluid and then wash out the cavity with the perchloride solution and draw off any remaining fluid. The last case on which I operated was an old double hydrocele with thick walls. The result was quite satisfactory. The injection does not cause pain, and is not followed by inflammation. In these respects it is superior to iodine. Its action depends on its power of forming an insoluble albuminate of mercury, by which the walls of the cavity are glued together.

As far as my experience goes, there is no danger of mercurial poisoning. The albuminate is fairly insoluble, and a large amount of mercury is not required. I have tried this treatment with success in a case of infantile hydrocele, after tapping had failed. Iodine causes pain when used, and often much pain afterwards by setting up more inflammation than is required to cure. Iodine also is not always efficacious, and may be followed by abscess. I believe perchloride is sure in its action, and its use does not necessitate rest in bed afterwards. I should like to know if the experience of others who may have used it coincides with mine. Have any ill results been known to follow? Has it ever been known to fail? What is the weakest solution that is effectual?

ON THE TREATMENT OF VARIOLA AND OF VARIOLOID WITH COCAINE.—DR. ORY reports in the *Rev. gén. de clin. et de Thér.*, No. 9, that in a case of severe confluent variola improvement ensued and the eruption began to disappear immediately after the patient had taken more than ten pills of 0.002 gr. of cocaine each in one night. After a few days 10 drops of a 5 per cent. solution of cocaine muriate was given four times a day, and the patient was well inside of ten days. In another case a cure of varioloid was effected under the cocaine treatment in five days after the appearance of the pustules. A third case of acute hæmorrhagic varioloid got well without scars under the cocaine treatment within five days. Also in two children (8 drops of a 1 per cent. solution each four times a day) a cure of varioloid ensued under the same therapy in five and six days. As the blisters dried up immediately after the use of cocaine in all cases it could not be determined with certainty whether, in one case or another, the disease was not variola. Cocaine neutralizing the variola virus in the infected organism so rapidly, Ory is of the opinion that it is capable also of preventing its development in the healthy organism, and advises its use as a preventive for those surrounding variola patients.—*Wiener Medicinische Wochenschrift*, No. 22, 1889.

THE DIAGNOSIS OF PANCREATIC DISEASE.—From a careful examination of a case which was under Gerhardt's care at the Berlin Charité von Ackeren endeavors to assign a certain diagnostic importance to the presence of undecomposed carbo-hydrates in the urine of cases suffering from disease of the pancreas. The patient was a man 49 years of age, admitted suffering from vomiting, constipation and emaciation. To the right of the umbilicus there was palpable a painful irregular tumor which moved to the right when the stomach was full. The emaciation progressed, although the size of the tumor scarcely increased; œdema of the legs and ultimately ascites and hydrothorax set in, and he died five months after admission. At the necropsy there was found in the pyloric region an ulcerated carcinoma with secondary growths in the retro-peritoneal glands. Two such nodes were present in the pancreas—one in the tail and a larger one in the head of the gland. Two or three weeks before death the urine, which had hitherto been normal, increased in quantity, notwithstanding the œdema, and the specific gravity went up to 1028 and 1030. Fehling's solution showed reduction only some time after heating, while the nitrate of bismuth solution turned black after some minutes' boiling. Polarized light was rotated to the right, and the fermentation test gave a positive result. The application of other tests showed these reactions as due to the presence of maltose and a closely allied carbohydrate. Indican was present in abundance, and there was no biliary pigment. The motions, although repeatedly examined, never showed any fat, but, on the other hand, there were numerous striped muscular fibres. As these symptoms were added to those of cancer of the stomach only two or three weeks before death, they probably coincided with the occurrence of secondary growths in the pancreas. The presence of striped muscular fibres in the fæces was of great importance, as they have been found in nearly all those cases, although here, as shown by the constipation which existed, they could not be looked upon as due to a rapid passage through the intestine. Both this symptom and the absence of indican from the urine have been attributed to the failure of trypsin. In a case recorded by Gerhardt, where the enlarged head of the pancreas had led to intestinal obstruction, indican was absent, and that observer sought to invest it with some diasnostic significance; but it may be explained by albuminous matter not entering the intestine, as it has been shown that indican disappears entirely by the third day in cases of inanition. In this case it was present in abundance. With regard to the presence of fat in the fæces, F. Müller has shown that when this occurs the case is always complicated by other conditions, especially jaundice. Here no biliary pigment appeared in the urine, nor was there any fat in the motions. According to v. Mering, the pancreas possesses the most powerful diastatic ferment; and it is probable that it is the pancreatic secretion alone which converts the maltose, derived from the carbohydrates of the food, into grape sugar. As carbohydrates do not appear in the motions, the only symptom pointing to disturbance of this process is the excretion of sugar in the urine, and in this connection it is interesting to recall the fact, long ago observed by Frerichs, that in diabetes mellitus the pancreas is frequently found much atrophied. (*Berlin. klin. Wochenschrift*, No. 14, 1889.)—*The Practitioner*, June, 1889.

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SATURDAY, AUGUST 3, 1889.

AMERICAN GYNECOLOGY.

The Provincial Medical Journal of England, in an editorial relating to the British Gynecological Society, pays a very high and well deserved compliment to the Society in question, and incidentally to American gynecology and dentistry. "We write with regret," says the editor, "that the Americans are ahead of us in dentistry and in gynecology. The reason is that gynecology was separated from obstetrics, and its study put on a proper basis. Excellent handbooks, as those of Thompson, Mundé, Goodell, have been published and are to be found in every practitioner's library in the States. The Americans took up the study with all the energy of a young people, and we are simply following in their wake, and attempting to interest general practitioners in a branch of practice which is the most important one to them. There is always a little difficulty in launching out a new society. Even in the practice of medicine there are jealousies, but the British Gynecological Society had even less difficulty than was anticipated. It evidently met a want; hence its hundreds of members; hence the success of its meetings and its transactions. Opposition and competition are excellent things; they stimulate to action; and the best thing for the British Gynecological Society would be personal antagonism, as we feel sure it would stir up those who are interested in it to make it a still greater success."

The Provincial Medical Journal evidently has considerable fighting blood in its veins; but if inclined to be aggressive it is certainly just and candid, both in regard to the British Gynecological Society and to American gynecology and dentistry.

We Americans are certainly very much interested in the British Gynecological Society, for it has ever shown since its foundation an amount of enterprise that is really quite American! An outgrowth of the Obstetrical Society of London, it had its beginning in 1885, since when the accessions to its membership have been extremely rapid, while the character of its work has been the very best. By the Obstetrical Society it was regarded, at first, as simply a little rabble of fanatics blindly running after their leader, Tait. Three years ago an American in London was informed, by one of the most prominent obstetricians of England, that he could not possibly promote his interests either in England or in America by joining such a society as this one. To-day the British Gynecological Society has a large number of members in this country who take a very cordial interest in the work being done by the Society, many of whose home members, such as Tait, Bantock and Barnes, are well known by us not only from their published works, but from visits made us. We are little concerned in the rivalry between Sir Spencer Wells and Mr. Tait. Even if it be true that Tait's eminence made easy the establishment of a new society in which Americans at once took a great interest, we find no evidence of weak idolatry in the members. The Obstetrical Society decries its rival "because its members remove too many ovaries." After all, each one will have to decide such matters for himself.

We admire Wells and we admire Tait, and we do not believe that the former is the Obstetrical Society, or the latter the Gynecological Society. Each has had a rich experience which we who are interested in operative gynecology will do well to carefully study. Meanwhile we find that the British Gynecological Society is doing more to make its work known abroad than is any other special society in England.

HEALTH BOARDS AND PHTHISIS.

The circular recently issued by the Health Department of the City of New York, in relation to the prevention of tubercular consumption, is undoubtedly founded upon the most advanced laboratory investigations of the life history of the bacillus which is supposed, in the present state of

our knowledge, to constitute the "contagium vivum" of this disease; but it is hardly characterized by a sufficient degree of practical applicability to warrant the hope of an immediate abolition of infection. Granting the postulate that the "living germs" in the sputa of consumptives, expectorated "on the street, floors, carpets, handkerchiefs, etc.," may, after drying, "float in the air as dust," and admitting the germicidal efficacy, even in a highly albuminous medium, of mercuric chloride, it is still difficult to understand how the prophylactic directions of the circular are to be generally carried out. In the population of New York there are probably more than twenty thousand consumptive people daily frequenting public places, and expectorating their "enormous numbers" of bacilli on the sidewalks, in cars and other conveyances, in lecture rooms, theatres, hotels, and even churches. The parks naturally possess a peculiar attraction for them, and an excursion-boat commonly bears more than its statistically normal share of them. The circular wisely ordains that such persons should not be permitted to spit on anything which cannot be immediately disinfected, and adds: "The spittle of persons suspected to have consumption should be caught in earthen or glass dishes containing the following solution: corrosive sublimate 1 part, water 1,000 parts." But how is this to be effected? Shall we have in the future City of Health an army of emissaries from the Department closely watching the footsteps of each "suspicious wayfarer, and thrusting a regulation glass dish under his nose whenever he coughs? Or will there be a special bureau of auscultation and percussion to verify the suspicious cases and isolate them in an aquarium of bichloride solution?

Where the suspicious stage is past, and the certainly consumptive patient is confined to the house, it is prescribed that his rooms should have "as little furniture as possible," and that "the use of carpets, rugs, etc., ought always to be avoided." The abstract advisability of depriving a mother or wife whose days are numbered, and who is to be scientifically considered only as a focus of infection, of all accustomed comforts may commend itself forcibly to the strictly medical mind, but the strangely sentimental prejudices of the public at large will, we fear, prevent the adoption of this rule by perhaps the majority of those who can afford the prescribed luxuries.

The recommendation to "catch the bowel discharges of consumptive patients" in vessels containing the same solution advised for the sputa is not likely to be observed among the poorer and more ignorant classes, whose overcrowded tenements enhance the proclivity to infection; and in view of the common carelessness of such folk, it may be questioned if the domiciliary storage of corrosive sublimate may not present some counteracting disadvantages, and whether it be better for their unkempt offspring to be poisoned in infancy or to die of phthisis at a more advanced age.

Other rules are given, touching the nursing of children by mothers suspected of consumption, the washing of a patient's clothing, the marriage of "suspected" persons, and divers more or less relevant minutiæ of antisepsis, the theoretical propriety of which must be apparent to the meanest capacity, but the enforcement of which is problematical. For, be it remembered, this circular is not addressed to physicians, who alone are competent to appreciate the importance of its suggestions, and who may usually be trusted to take intelligent precautions as far as circumstances will permit; but is spread broadcast among the populace, who are neither educated to accept scientific conclusions nor likely to recognize the existence of tuberculosis until it has reached its final stage.

WITH RIGHT INTENT.

With a politician at the head of the Health Department of New York City, it is not surprising that such a bulletin should emanate from such a source. That in its application it is impracticable, we have already shown. Indeed it is easy to assume the rôle of objective and even of destructive criticism when difficult problems are involved, and to demonstrate the errors involved, but it is another thing to point out with unerring certainty the better plans and the methods to success.

While criticising its methods, THE JOURNAL desires to emphasize its approval of the purpose of this municipal legislation. Imperfect as its work may be it is nevertheless expressive of *the right intent.*

A great fact underlies this action which is of great importance to the citizen and to the State.

It involves this fact, that municipalities are charged with the surveillance of the health of its citizens. If so, it follows that when by any means the general health is imperilled, legislation should come to its rescue, and that as life is paramount to property, by so much the more should commercial interests and personal convenience yield to such restrictions as may be needful for life-protection. In emergencies absolute quarantine is the logical sequence of such legislation.

This brings us to the purpose of this article. The public mind is becoming more and more enlightened with reference to the nature of diseases. It is more and more apparent that while many affections may not be subject to control, on the other hand there is a vast amount of preventable disease, and the conclusion is legitimate that when prevention is possible, prevalence is evidence of criminal neglect. Naturally the public turns to the medical profession for the solution of those questions in which human health is involved. If we assume the responsibilities incident to the criticism of imperfect methods, we should be prepared to indicate those that are better. The province of the medical profession at the present hour is not only to deal with those that are sick, but with those that are well. And by so much more as a man is valuable to the State in health than in disease by so much the State is interested in preventive medicine. It has need, then, to be informed as to which are, and which are not preventable diseases. It needs to be correctly informed as to what may be done legitimately, and also of the difficulties which lie in the way of controlling contagious diseases.

The answers to these questions involve a vast amount of painstaking investigation and perhaps the work of years. But only by such investigation and by such patient observations can these answers be reached. Only upon knowledge thus obtained can intelligent and satisfactory legislation be based. If in their work medical men shall come to correct conclusions the honors and the benefits which shall inure to such labors will be beyond measure. If, on the other hand, premature conclusions shall be involved with serious errors, in practical application these errors will surely become apparent, and in proportion to their gravity will be the severity of criticism which the medical profession must endure.

The question involved is this: Can the profession so wisely guide an intelligent public as to assure an abiding loyalty, or shall it fail of its true mission, and provoke infidelity to the fundamental facts of sanitary science? If we are destructive in criticism, let us be also constructive of the best methods of promoting the public health, and let the necessities for correct conclusions stimulate men that are equal to the demand to at once and continuously put forth the needed effort.

THE RESIGNATION OF DR. DE WOLF.

Chicago has suffered a loss by the resignation of the Commissioner of the Health Department, Dr. Oscar C. De Wolf, who, through his official services as Health Officer for the past thirteen years, has contributed so much to the well-being of its citizens, and, at the same time, has gained for himself a National reputation as a man able to successfully grapple with all the difficulties besetting such a position, political and sanitary. *The Sanitary News*, editorially referring to his resignation, says: "He has practically created the Health Department of this city. . . . . He has demonstrated fully his ability to preside in this capacity by his efficient ministration in a field of so great magnitude, confronting him with so many and so great difficulties. Whatever his future labors may be, his gain will not be so great as the city's loss, but in whatever field his efforts may be directed, we trust the same measure of success may attend him. His successor, Dr. Wickersham, will find a well organized department, and we hope his labors will prove efficient, and receive the hearty support of all the citizens."

Dr. De Wolf is a member of the American Medical Association, having joined at the Chicago meeting in 1886.

EDITORIAL NOTES.

HOME.

THE AMERICAN DENTAL ASSOCIATION meets at Saratoga Springs, commencing August 6th, The prospects are said to be good for a large convention.

THE CINCINNATI FREE HOSPITAL FOR WOMEN has been organized by the election of the following officers: *Board of Trustees*, Thos. H. Egan, President; Dr. H. Longstreet Hall, Secretary;

W. H. Curnayhan, Esq., Treasurer; Dr. C. L. Armstrong, H. M. Rulison, Rev. M.C. Lockwood. *Staff*, Drs. Charles A. L. Reed, Rufus B. Hall, Surgeons; Charles E. Caldwell, Pathologist; J. A. Johnston and A. I. Carson, Assistant Surgeons. A large and influential Board of Lady Managers has also been elected.

DR. JAMES F. HARTIGAN, of Washington, an active and esteemed member of the Medical Society of the District of Columbia and the American Medical Association has been appointed to an Austrian consulate.

THE ACT REQUIRING A LICENSE TO PRACTICE MEDICINE CONSTRUED AND HELD CONSTITUTIONAL.—The opinion of the Supreme Court of this State, by Shope, J., holding that in this case the validity of the statute was involved, and the appeal was properly taken to the Supreme Court, that this proceeding is not in its nature criminal, being punishable by fine, and does not come within the spirit of the law forbidding appeals or writs of error by the people, or the twice putting in jeopardy. It is simply a civil proceeding—an action of debt to recover a penalty. That the subject of the Act is sufficiently set forth in its title; that the defendant travelling from place to place with a band of music, and collecting the people together, and vending remedies and nostrums for the cure of disease, etc., without a license, was a violation of the section under consideration of the Medical Practice Act. Although this is a short opinion, there are several important questions passed upon by the court of last resort. In construing the law relating to the practice in our police courts, this opinion will well repay a careful examination and study. This opinion is published in full in the *Chicago Legal News* of July 13.

FACULTY CHANGES.—The Faculty of the College of Physicians and Surgeons of Baltimore, held a meeting recently to fill the vacancies created by the deaths of Professors John S. Lynch and Oscar J. Coskery, and the retirement of Professor A. B. Arnold, who has removed to San Francisco. Prof. Thos. S. Latimer was transferred to the chair of principles and practice of medicine and clinical medicine; Prof. Chas. F. Bevan to the chair of principles and practice of surgery and clinical surgery; Prof. J. W. Chambers to the chair of operative and clinical surgery, and Prof. George H. Rohé to the chair of obstetrics and hygiene. Prof. Thos. Opie will continue as professor of diseases of women and dean of the faculty. To fill vacancies created by these transfers new professors were elected as follows: Prof. Henry Sewall, of the University of Michigan, to the professorship of physiology; Dr. George J. Preston to the professorship of anatomy, with the diseases of the nervous system as a clinical branch of instruction. Dr. N. G. Keirle was elected as lecturer on legal medicine, in addition to his demonstrations in pathology; Dr. George Thomas as lecturer on diseases of the throat and chest; Dr. G. A. Liebig, Jr., of Johns Hopkins University, lecturer on medical electricity, and Dr. J. H. Branham, demonstrator of anatomy. Drs. L. F. Ankrim, Frank C. Bressler and F. G. Moyer were appointed assistant demonstrators, and Dr. R. G. Davis, prosector of anatomy. As an evidence of esteem on the part of his colleagues, Prof. Arnold was elected emeritus professor of clinical medicine on his retirement.

MILWAUKEE'S GARBAGE CONSUMER.—Sanitarians and health officers have endeavored from time to time to solve the problem of how to dispose of the accumulation of garbage in the large cities. Milwaukee has adopted a consumer known as the Merz process, and which is described by a contemporary as follows: About thirty-five tons of garbage—"good, clean garbage," free from ashes—is delivered at the works every day at this time of year. The wagons drive up an incline and unload upon the second floor, where it is immediately thrown into the dryers. The dryers are tanks about fourteen feet long and five feet in diameter, having a double cylinder—a small one inside of a larger. Between the shells, or the cylinders, is a steam space of two inches, which has a boiler pressure of eighty-five pounds on constantly. The cylinders have cast-iron heads, and a large hollow shaft running through the centre of the inner cylinder. This is also filled with steam, and revolves by means of gear wheels, keeping the contents in circulation until thoroughly dried.

The moisture is drawn off by means of a large exhaust fan through a twelve-inch pipe and forced into a spray condenser. When the material is thoroughly dried it is discharged from the dryer

into a conveyer, which deposits it into square tanks called extractors. After being sealed and made air-tight benzine is introduced into the extractors and the grease is dissolved with a solution of hot benzine. After the grease has been dissolved and washed out, the material is sold for fertilizer.

The benzine is distilled out of the grease over again and used. The grease is sold to soap and candle makers.

FOREIGN.

SMALL-POX AND TUBERCULOSIS.—At the late Congress on Tuberculosis it was stated that persons who have had small-pox are peculiarly liable to tuberculosis. M. Landouzy deprecates the employment of persons pitted with small-pox around the tuberculous wards of infirmaries and hospitals.

WANTED, AN EDITOR.—*The British Medical Journal* says: "'I want a hero—an uncommon want,' sang the poet. A still more uncommon want, one would have thought, would have been that of an editor for a medical journal. Yet from this cause the *Breslauer ärztliche Zeitschrift* came to an untimely end on June 29. It has been impossible to find 'a commanding personality' to supply the place of the late Professor Gscheidlen, who founded the journal and gave it the prominent place it held in German medical literature during the ten years of its existence. Those interested in prolonging the life of the defunct periodical should have sought for what they wanted in this country, where would-be medical editors grow on every bush."

Why not have crossed the Atlantic, where medical editors are more plentiful than the "would be" ones in England?

IN ENGLAND a London health inspector reports a number of cases of diphtheria caused by cats going from house to house and thus carrying the virus. Queen's Hospital, Birmingham, is the recipient of $5,000 by the will of Mr. George Dawes, of Smethwick. Dr. Burroughs lauds nitro-glycerine as a quick stimulant in place of alcohol, and gives as the ordinary dose 1 drop of 1 per cent. At a recent meeting of the Royal Botanical Society Mr. R. G. Lecky described, in a very interesting paper, a new edible seaweed found on the coast of Ireland, and which, according to the author, is a nutritious, wholesome, and cheap food, so excellent in taste that it may be called a luxury.

IN FRANCE the students in Paris have decided to wear distinctive badges to denote the courses which they are pursuing. Dr. Gautier, while pulverizing dry discharges for the purpose of making experiments as to infection by tuberculous germs, became himself infected and died. Dr. Lancereaux, physician to the Hôpital de la Pitié, objects to the use of movable stoves, which are apt to cause carbonic acid poisoning. The Société Médicale des Hôpiteaux have recognized the necessity of isolating cases of whooping cough, which the members consider far more contagious than either scarlatina or measles, and have approved the organization of small wards, containing six or eight beds, instead of the large wards which are now used.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting. Report of Sections.

Section on Laryngology and Otology.

FIRST DAY, TUESDAY, JUNE 25.

DR. W. H. DALY, of Pittsburg, Pa., delivered the Chairman's address, entitled *Marking an Era in Laryngology*. The author referred to this, the first meeting of the Association of Laryngology and Otology, as an exclusive and autonomous Section, disassociated from the Section of Opthalmology. The laryngologists and otologists have long agreed, that to be an able practitioner in either speciality one must be well informed and competent in both of these special branches. While there is little call for the special skill of the laryngologist in treatment of the eye, we are convinced that there was no mistake in expressing the opinion eight years ago at the International Medical Congress that the laryngologist of the future must be more of a rhinologist, and the rhinologist more the surgeon than the physician. As by far the largest number of inflammatory diseases of the middle ear cannot be successfully attacked without the skill of the laryngologist and rhinologist, since the largest number of these cases begin in the naso-pharynx and are only arrested by the proper skill in treating these parts. The new relation is close, rational and common sense.

DR. JOHN MCKENZIE, of Baltimore, reported *A Case of Lymphoid Tumor Originating in the Floor of the Pyriform Sinus*, and threatening suffocation when the patient was in the recumbent

position. A clergyman, æt. 42, had never had any throat trouble, and was otherwise in perfect health. There was no assignable cause for the growth. On microscopic examination it was found to consist entirely of the lymphoid tissue of the pharynx recently described by Waldeyer and his pupils. The tumor was removed by first exciting gagging, so as to throw it as far as possible up towards the back of the tongue. It was then caught with a pair of laryngeal forceps, and with these as a guide, the large écraseur was passed over the tumor and it was rapidly cut through. The reporter remarked that growths of various kinds are occasionally found on the pillars of the fauces, glosso-epiglotic fossa, and upper pharynx; but tumors originating in the pyriform sinus are exceedingly rare, and that the growth described is unique.

DR. SOLIS-COHEN remarked that it was rather curious that this unique growth originated in the position from which some few cases of lipoma had taken origin.

DR. JONATHAN WRIGHT, of Brooklyn, N. Y., read a paper on *Nasal Bacteria in Health*. The bacterial contents of the normal nasal chambers in ten cases were examined by culture methods and by cover-glass preparations, with the result of finding the staphylococcus pyogenes in six of the ten, and only air forms in others. The function of the nose as a bacterial filter of air passing through it, was spoken of, and photographs shown of one experiment which showed mold growths on gelatin plates. As far as the limited experiments of the author of the paper went, about three-fourths or four-fifths of the total number of the bacteria in the air find a lodging place in the nose before the tidal air reaches the lower pharynx. The paper was preliminary to more extended bacterial investigations into nasal diseases.

DR. JOHN MCKENZIE thought the solution of many points in nasal pathology by bacterial investigations would not be an event of the immediate future. The problem is an intricate one, especially in view of the constantly changing environment of the individual. The dependence of ozena on micrococci has not been determined.

DR. W. FREUDENTHAL, of New York, read a paper on *The Connection Between Chronic Diseases of the Upper Air Passages and Hernia*. In continuation of former observations the author found that in accordance with the frequency of nasal disease, hernia are found: In the United States in 50 out of every 1,000 conscripts; in France, in 22.89; in Italy, in 16.61; in Austro-Hungary, in 14.09; and in Germany in even less than 14. Furthermore, the author of the paper proves the correctness of his theory, against Dr. Schafinger who had affirmed that facts do not sustain it. In women herniæ are rarer than in men, on account of the weaker stress used in act of hawking, clearing the throat and the like.

DR. J. H. BRYAN, of Washington, D. C., read a paper, entitled *Diagnosis and Treatment of Abscess of the Antrum of Highmore*. The author, after describing the antrum and its relations, remarked that until recent years abscess of the antrum was thought to be very rare, but that we now know that it occurs quite frequently. Of surgical affections, suppurative inflammation plays the most important part. It generally occurs after the second dentition. Among causes are traumatism, exanthemate, syphilis, extension from the nose of inflammation of its lining membrane, extension from inflammation caused by carious teeth. Authors differ as to the relative frequency of these causes. The author regards sero-mucus accumulation or hydropsantri as the result of nasal disease, but muco-purulent as arising from carious teeth. The close relation of roots of the second molar teeth with the antrum affords ready communication of disease from them. Symptoms vary in different cases. Sometimes there is distention of the walls of the superior maxilla and swelling of the cheek, etc., tenderness on pressure, a springing deviation to the finger on pressure over the distended cavity. A narrowing of the field of vision by pressure on the floor of the orbit, is regarded by Ziem as diagnostic in favor of disease of the ethmoid cells. In some cases there is a discharge of fetid pus from the nose. Pus from the nose may be due to foreign bodies, disease of bone, secretion of pus from the antrum or from the frontal sinus. Otherwise suppurative inflammation of the nose is extremely rare. The author then pointed out the indication which should guide in distinguishing among these possible sources a given case.

A great deal has been written recently as to treatment. The author noted the tendency to return, after a century, to Hunter's method of opening through the nose, instead of through the mouth. Cooper's method through the alveolar process has been in greatest favor. Extraction of teeth may be necessary, and if sound ones this is an objection to the method, and this is the case with which foreign substance and bacteria from the mouth may penetrate through the opening. Its advantages are easy drainage and washing out with antiseptics. Bertrand opened through the hard palate. Hartman has revived Hunter's method. This does not afford easy means for evacuating thick pus and for washing out, etc. Stoerk claims several cures by this method. The author thinks its disadvantages will prevent its general acceptance.

Miculicz advises opening where the lateral wall of the nose is thin, and uses a special double cutting knife, attached to the handle at blunt angle. Local anæsthesia by cocaine is sufficient. By this opening the floor of the cavity is well drained and easily syringed out, and there is little danger of

foreign bodies gaining entrance as when the opening is through the mouth. Local treatment is important—washing out with mild disinfectants. The best for fetor is permanganate of potash.

Some cases will require where the inflammation is obstinate, the author recommends, the use of peroxide of hydrogen; or better, glycozone—a mixture of glycerine and peroxide of hydrogen. It destroys the septic material and stimulates at once.

The author gave the history of several cases treated by himself.

Discussed by Drs. Lippincott, E. Fletcher Ingals, Daly and Boyan.

Dr. John O. Roe, of Rochester, N. Y., read a paper on *Glandular Hypertrophy at the Base of the Tongue*. The author remarked that in the near past this condition, which is not rare, has been overlooked for the most part. Collections of mucus and lymphoid glands aggregated in various masses in the naso-pharynx, fauces, are of the same general nature and have received the name "tonsil." The lingual tonsil is so situated as to be easily irritated by solids and fluids of different temperature and character. They are surrounded and supplied with a system of blood-vessels. By these exposures to irritation they are especially exposed and become congested, enlarged and varicose. This condition may also be due to general plethora and may indicate portal congestion, mitral disorders, or even cerebral tumors. The diagnosis is easily made by inspection on drawing the tongue forwards.

The treatment involves two measures: First, to remove the growth. This is done with a curved knife, by slicing off down to the normal level, or with a pair of scissors curved on the flat. This operation is attended with very little bleeding, the tongue heals quickly and is attended with very little soreness. The galvanic cautery may be used, either the knife cutting through the base or by transfixing with a needle. The other measure of treatment is to destroy the varicose vessels. This is best accomplished with the galvano-cautery by use of a fine point applied along the course of the vessels. Caustic is used by some, nitric, chromic acid and Vienna paste—but when a great amount of hypertrophy is present the operative measures are best.

Discussed by Drs. Solis-Cohen and Green V. Woolen.

Second Day, June 26.

The following were elected officers for the ensuing year: Dr. John O. Roe, of Rochester, N.Y., President; Dr. Frank H. Potter, of Buffalo, N.Y., Secretary.

It was voted, on motion, that the Secretary select an Associate Secretary, familiar with otological knowledge, and living at the place of meeting of the Association next year.

On motion of Dr. Solis-Cohen, it was voted that hereafter one meeting of the Section be devoted to subjects of otological interest.

Dr. D. Bryson Delavan, of New York, read a paper entitled, *Adenoid Hypertrophy at the Vault of the Pharynx; its Pathology and Treatment.* The writer stated that there were two principal varieties of this disease. In one the growth was soft, friable and rich in lymphoid elements, in the other there was an excess of fibrous tissue. The first was removable with ease and with little pain, the latter was exceedingly tough and removal caused much pain. The methods of operation were alluded to and it was insisted that in the more severe cases, even in young adults, the use of anæsthesia was of the greatest importance, and that the removal should be completed, if possible, at one operation. The writer also insisted upon the great importance of the proper after-care of patients thus operated upon, and recommended that they be kept in bed until the general effects of the operation had disappeared, that they be put upon a course of tonic treatment, that the mouth-breathing habit be corrected, by special attention thereto, that deformity of the chest, if present, be remedied by proper physical exercises, and, finally, that errors of pronunciation be eradicated. The paper was illustrated by numerous instruments and by several fine colored drawings.

Dr. Joseph A. White, of Richmond, Va., then read a paper entitled, *The So-called Third Tonsil.*

The author's experience and observation led him to believe that glandular hypertrophy in the post-nasal space, however produced and however little, is an active agent in keeping up a catarrhal condition of the region and causing its extension to neighboring cavities, especially the ear. To get rid of naso-pharyngeal catarrh it was necessary to destroy hypertrophied tissue as a means to this end, and to the same end chronic follicular tonsilitis, so-called, must often be removed. We do not know the exact function of these glandular structures, but we do know that their removal is followed by no disaster. Perhaps the third tonsil plays a greater part with production of secondary disease than the faucial tonsils. This is easily understood when their relations to the blocking up of the air-passages and interference with the proper ventilation of the Eustachian tube is considered. Marked impairment of hearing is always present in these cases of soft lymphoid tissue. Besides the mulberry-like growths there may be round or conical nodules, or several knob-like outgrowths, or flat, cushion-like nares, etc. Sometimes these are soft and easily removed. Sometimes they are dense and hard. The Eustachian tubes are especially injured by tissues of the latter character, the opening being seriously dammed by their pressure. Such are more difficult to cure. Statistics are unreliable, because slight deafness

is overlooked in these cases. Careful tests will usually discover more or less deafness where these growths exist. Out of 565 cases during the past eighteen months, treated for naso-pharyngeal affections 197 had disease of the middle-ear. Of the whole number, 134 had hypertrophy of the the third tonsil, of whom 62 had impaired hearing—20 per cent. Perhaps the larger proportion than reported by other observers is due to peculiar climatic influence. An interesting point in these cases is the large number of voice troubles found among them, and laryngitis, resulting from these hypertrophies in the vault of the pharynx. The vaulted space should be perfectly preserved in shape if resonance and timbre of the voice is to be preserved, as is well known from our experience with singers and others who habitually use the voice. Naso-pharyngeal troubles are always aggravated by these glandular enlargements, causing increase of secretions, etc., and this prevents the benefit of other local treatment, unless the hypertrophies are first removed. One of the serious results of the neglect to do this is anterior turbinated hypertrophy. Another is the occasional paralysis of the alæ of the nose, causing serious impediment to breathing. It matters little how the growths are removed provided it be thoroughly done. Large masses are best removed with the galvano-cautery, snare, or cutting forceps. So also of the denser growths mentioned above. The use of the forceps is quite painful, even when cocaine is used. Smaller hypertrophies and smooth masses are best removed by galvano-cautery points or moxa-electrodes. The author had found his palate-retractor of great help in such work.

The paper was followed by a report of cures and exhibition of specimens.

DR. LAWRENCE TURNBULL read a paper *On the Value of Antiseptic Treatment, and Protection for the Membrana-Tympani, in Perforations the Result of Otorrhœa*. He stated that it was not necessary at this time to advocate or dwell at length upon the great value, nay, absolute importance, of antiseptic surgery. Its latest triumphs and most brilliant results have been shown in brain surgery. It is not only possible to reach and drain abscesses in the tempo-sphenoidal lobe of the cerebrum, but it is considered possible to save life by opening into the cerebellar fossæ and remove pus from the neighborhood of the lateral sinus. The antiseptic treatment of chronic purulent disease of the middle ear was a natural sequence, and was soon followed by the use of boracic acid in powder and solution, and still later by the superior antiseptic agent, bi-chloride of mercury, alone or combined in solution; then by the use of antiseptic wool, and gauze, with the protecting agency of oiled silk, which protectors act as artificial membranes and prevent the entrance of diseased germs from the air.

The author of the paper then dwelt upon the various causes preventing the *cure* of chronic discharge from the ear. Also the treatment of perforations of the membrana tympani by means of grafts of skin, lining membrane of the chicken egg, skin of the frog's foot, and nictilating membrane of the frog's foot.

The paper concluded by reporting a few cases in illustration of the subject.

DR. C. W. RICHARDSON, of Washington, D. C., then read a paper on *The Possible Danger of Injury to the Middle Ear Cavity by the Use of Nasal Atomizers, Illustrated by Three Cases.*

The author expressed the expectation of exciting criticism and skepticism. The object of the paper was to call attention especially to danger to the middle ear as a result of atomization of the nasal cavities by such instruments as Davidson's and Snowdon's atomizing tubes from direct pressure. The first case, that of a lady, being treated for rhinitis atrophica. During the use of the spray with Dobell's solution, pain was experienced in the ear. This was followed in a few hours by serious ear trouble, pain radiating over the side of the head and along the Eustachian tube. Effusion set in and was attended with deafness, roaring in the ear, etc., all the symptoms of acute otitis media.

The second case occurred in a gentleman who had great hoarseness and naso-pharyngitis. While using the spray the patient remarked, "Doctor, that certainly entered my ear." The spray was stopped at once. Soon after great pain set in and became almost unendurable. The pain was of a throbbing character, intensified by coughing, clearing the throat and swallowing. There was tenderness over between the mastoid and the jaw, hearing reduced R. $\frac{20}{45}$, L. $\frac{15}{45}$. Cerumen was found in R. E. It was removed, and hearing then was R. $\frac{30}{45}$, L. $\frac{35}{45}$. The membrane of right ear then showed evidences of morbid inflammation. It was a case of acute middle ear inflammation, well marked.

In case third, Dr. L. consulted the author in February, 1889, for severe pain in right ear, and was constantly annoyed by obstruction to free nasal respiration. The spray was tannic acid gr. j to ℥j. This was followed, like the other cases, with acute symptoms of middle ear inflammation. Cases published by Dr. Ring in the *Medical Record* of August 11, 1888, were referred to by the author.

The author gave his explanation of the manner in which the spraying under pressure excites middle ear trouble. He declared it a common experience with himself, as he had no doubt it was with other laryngologists, that under the spray patients often express the sensation that fluid has entered the ear. The intention of the paper was not to decry the use of the atomizer, but simply to call attention to possible dangers. The author also called attention to the fact noticed by him that the use of the spray may be the direct agent in producing otitis media hypertrophia.

DR. MACKENZIE believed that fluid may enter the ear by any method of cleansing the nose, and that the danger does not pertain specially to the spray. He narrated a case of double otitis media resulting from the use of intranasal spraying. His remarks did not apply to the nasal douche.

Discussed by Drs. Wright and H. H. Curtis.

DR. J. L. THOMPSON, of Indianapolis, Ind., read a paper entitled: *Report of Cases of Dangerous Middle Ear and Mastoid Inflammation which followed Treatment of the Naso-Pharynx*, in which he gave the history of, 1, case of suppurative otitis media excited by the use of finely powdered acetate of lead in epistaxis; 2, case of otitis media with extension to mastoid following application of strong solution of nitrate of silver to the nares; 3, otitis media, following application of caustics to the nasal mucous membrane; 4, case of suppurative otitis media of five years' duration following applications to the nares; 5, case of suppurative otitis media with total loss of right drum head and greatly impaired hearing following surgical treatment of naso-pharynx. The history of twenty cases of similar nature were reported by the author at considerable length, of similar origin and of the same general character as those above cited. The author remarked in conclusion: 1, that from his experience he was convinced that inflammations from said causes are of very frequent occurrence; 2, operations should never be made nor caustics applied to the nose during acute catarrhal inflammation of the parts; 3, patients should be instructed to report immediately on the first twinge of pain in the ear after an application to the nose; 4, the operator should be prepared to leech, puncture the drum, etc., promptly as soon as indication arise, and the operation for puncturing the mastoid, when extension to it has taken place of the inflammation, should by no means cause hesitation.

Discussed by Drs. H. H. Curtis, Ingals, and Woolen.

DR. J. G. CARPENTER, of Stanford, Ky., then read a paper entitled: *Internal Ear Deafness, Illustrated.* Internal ear deafness, in many of the cases, is due to nasal disease, and that by causing the latter the former is relieved, and that nasal disease should be cured before structural lesions have taken place in the inner ear. Report two cases in which in addition to chronic naso-pharyngeal catarrh for the predisposing and acute catarrh for the exciting cause, syphilis was an important factor in one and quinine in the other. The air in the Eustachian tubes and middle ears normally being in a rarefied state, that warm rarefied air should be used for inflation of the Eustachian tubes in preference to cold air, the acute and subacute congestion and inflammation should subside, the chronic congestion of the upper air-passages reduced to a minimum before inflation of the middle ears. In the cases reported there had been also aural catarrh and tympanic deafness before the labrynthian deafness supervened.

DR. J. A. LIPPINCOTT, of Pittsburgh, then read a paper entitled: *A Case of Sclerosing Mastoiditis, occurring subsequently to Primary Purulent Mastoiditis Interna. Opening of Mastoid. Exposure of Dura Mater. Recovery.*

The mastoid process had been opened in Sept., 1885, in a distant city, and an abscess found, which was carefully cleansed. The wound soon healed, and the severe pain was relieved for six months, when it recurred, gradually becoming more severe until July, 1886, when the case came under Dr. Lippincott's observation. All sorts of treatment, local and constitutional, failing to afford relief, Dr. L. made a pretty considerable opening in the mastoid, in October, which unfortunately accomplished nothing. The condition of the patient now became more and more deplorable. Notwithstanding the administration of large quantities of morphia, chloral, etc., pain was never absent. The patient became emaciated and haggard. Convulsions set in and occurred frequently. Seven months after the last operation, viz., in May, 1887, at the urgent solicitation of the young lady, a second operation was made. In the effort to make the opening this time sufficiently large and deep to give relief, the dura was exposed in the anterior part of the bottom of the wound to the extent of ¼ inch. On recovery from the anæsthesia the pain was found to have disappeared. Convalescence was rapid and uneventful, and the young lady resumed her work two months after the operation. A final examination made a few days ago reveals the same happy exemption from pain. It should be added that the chief symptom in this case was the extreme pain, there being no inflammatory appearances about the ear or the mastoid region.

DR. FRED L. CROSSFIELD, of Hartford, Conn., read a *Report of Two Cases, illustrating Epilepsy Caused by Intra-Nasal Disease.*

The first case came to my notice in 1886, and had all the appearances of some severe lesion of the lung. Emaciation, hacking cough, more severe at night, headache, night sweats, and poor appetite. Had epileptic convulsions past six years, twice a month or oftener. In connection with this condition he had marked nasal hypertrophy, both sides, with deviation of septum, left side, and exostosis in form of sharp angle, which pressed against the hypertrophied turbinated body. Marked adenoid growth of naso-pharynx, slight changes in the larynx. Epilepsy entirely disappeared when pathological condition removed. Patient now perfectly well. Second case much like the first, only slight enlargement of pharyngeal tonsil. The epileptic seizures much more frequent. This case likewise fully recovered on removal of the cause.

DR. CHARLES H. KNIGHT, of New York, read a paper on *Menthol in Laryngeal Phthisis*. Twenty cases, most of them of a severe type, treated with menthol applications, furnish the author ground for believing that this is a valuable agent in tubercular laryngitis. The drug was dissolved in fluid albolene, in the proportion of 1 drachm or 1½ drachm to the ounce, and applied by means of a laryngeal syringe, or in the form of spray, or with a nebulizer or vaporizer. In nearly all cases the subjective symptoms and the local appearances improved. In no case did complete healing of an ulcer take place. In this respect the author's experience does not bear out the representations of Rosenberg and others. Three propositions are offered: 1. Spontaneous cure of a tubercular ulcer of the larynx may occur. 2. A simple erosion or ulceration may be mistaken for a tubercular ulcer. 3. The best results from local treatment of the larynx may be expected in cases of incipient or limited pulmonary disease and in primary laryngeal tuberculosis.

DR. F. H. POTTER, of Buffalo, N. Y., then read a paper *On the Use of Menthol in the Upper Air Passages*, in which he reported the results obtained from its local application during the past three years. These results indicate that menthol controls superficial inflammations; that it is an analgesic and second applications can be made in increasing strength without discomfort; that it is destructive of some of the low forms of life, especially the bacillus tuberculosis, and that it is a valuable antiseptic in nasal surgery. It has an important place in the treatment of atrophic conditions. It can be used in strengths from 1 to 50 per cent., dissolved in an oil. The *Oleum Petrolina*, one of the petroleum preparations, the author considered the best for this purpose of dissolving the drug. It can be applied quickly by the cotton applicator or by means of the spray, or by vaporization. The direct method answers best in the pharynx, the spray and the vapor for the nose and larynx. Five cases of laryngeal phthisis consecutive upon disease of the lungs were also reported, in which the menthol treatment gave satisfactory results, the local diseased processes improving rapidly under its use.

DR. E. FLETCHER INGALS, of Chicago, Ill., read a paper entitled *Electrolytic Treatment of Cystic Goitre*. Various conventional methods of treatment of cystic goitre were referred to by the author, and especially that of Sir Morell Mackenzie, first published in 1872, and which is pronounced in Holmes' System of Surgery as the most efficient. It consists, as is well known, of injecting into the cyst a solution of perchloride of iron, plugging the canula of the trocar and allowing it to remain in three days, and repeating the procedure until suppuration occurs, aided by the use of poultices. The author claims that electrolysis promises more rapid cure and better results, and is attended by less danger and objectionable features. In support of this position he gave the history of two cases treated by himself.

In the first case, after the use of other methods had proved inefficient, electrolysis was employed. One pole, a needle, was introduced into the cyst, the other placed upon the tumor. By previous tappings the tumor had been found to be about one-third solid. From six to ten Leclanché cells were used for about ten minutes. This was repeated at intervals of a week three or four times, when the tumor ceased to refill and has remained cured. The solid part was unchanged and has not increased since. The second case was one which had existed for several years and had been injected with iodine and other fluids. On February 23 the tumor was found not to have diminished in size. Electrolysis was now used as in the former case. In a month from that date the cyst had ceased to refill and had been completely eradicated by electrolysis. The strength of the current in this case was graduated by the ability of the patient to bear it.

DR. HOLBROOK CURTIS, of New York, read a paper on *Anæmia and its Relation to Nasal Stenosis*. By a tabulation of cases he demonstrated that nearly all patients with stenoses were anæmic, the percentage of oxyhæmoglobin being only about one-half that of normal blood. In his experiments he had used the hæmatoscope of Hénocque, and had again tested the blood after several weeks had elapsed. The conclusions arrived at were that the increase of oxyhæmaglobin in the blood after operations on the septum is directly proportional to the relief afforded an impeded nasal respiration. This increase is constant and averages about 2 per cent. in the six weeks immediately following operations in which the stenosis is about 50 per cent., or in which the nose is doing but one-half its work. Cases should not be operated upon whose blood shows by spectrum analysis less than 6 per cent. of oxyhæmoglobin, as profound hæmorrhage is apt to occur. Records had also been kept in regard to body weight, chest measurement, and capacity of the lungs by the spirometer. These factors also exhibited improvements after operation.

THIRD DAY, JUNE 27.

DR. J. E. SCHADLE, of St. Paul, Minn., read a paper on *Cough in its Relations to Morbid States of the Nasal Passages*, in which he stated that the symptomatology of morbid processes seldom presents a more perplexing subject for analysis as to its primary cause, than that of cough. A chronic cough, whose persistency will not yield to ordinary methods of treatment, and whose ultimate significance is sometimes difficult to understand, is calculated as much as any other single condition to establish in the mind of the sufferer extreme anxiety. An important interest belongs to

this subject, especially in its *practical* relations to morbid states of the nasal passages. Three cases were reported in which chronic cough of long standing was cured by directing proper measures of treatment to a removal of the existing nasal disease, consisting in one, of posterior hypertrophies of the inferior turbinated bodies, one nasal stenosis, caused by deformity of the nasal septum, and one, chronic nasal catarrh. The author maintains that when cough is thus pathologically connected with morbid states of the nasal passages it is usually produced by reflex nervous influences or paresis of the vaso-motor blood-vessels of the intra-nasal mucous membrane.

Dr. Charles Denison, of Denver, Col., read a paper entitled *A New Mouth Gag. Together with the consideration of other possible aids to better results from Intubation of the Larynx.* The author presented a table of his intubation cases, numbering 25, with 7 recoveries. These were shown to be a severe class of cases. The author had experimented to construct a better gag than that usually employed, and exhibited four of the new varieties made. The next to the last one, made by Tiemann & Co., is intended to be held close to the left cheek of the child by the assistant, and is calculated not to get out of place during the operation. A new feature about all these gags, an idea of the author's, is to have the teeth troughs made somewhat swivel, so that they will fit any angle of the jaws, *i. e.*, any aged child. The power to open the jaws is afforded by a lever attached to a toggle-joint placed between the two sidearms of the instrument.

The last gag was simpler in construction, more compact, and gave greater power to open the mouth of a rebellious patient, In fact it cannot be resisted. A pin on one arm lies in an eliptical groove attached to a circular plate, the center of which is pivoted to the other arm of the gag. By three turns of this plate the extreme distension required in any mouth is obtained. The author had been bitten, and had other accidents, from the loosening of the original gags sold with the O'Dwyer sets of tubes. This last instrument was made by H. Rauchfurs, of Denver. The great necessity for earlier intubation than he thought was customary with operators was then shown. In two successful cases when the author had intubated he had been led to avoid delay by noting that the tension of the pulse was less during expiration, showing that there was already suction of blood back into the thorax during inspiration, in other words, an aspiration because of the laryngeal constriction was taking place. The author called this *an œdema* of the *air-cells*, and he was led to believe that this was the inauguration in young children of a catarrhal process in the lung periphery and bronchial tract, usually resulting in death in from twelve to forty-eight hours after intubation.

In 9 of his 18 fatal cases death came in an average of twenty-six hours after intubation, and these deaths were by the writer attributed to this aspiration œdema, or "aspiration pneumonia," as Dr. O'Dwyer calls it. A case in illustration was given where the author desisted from intubation because the child was evidently dead. He directed this patient, a little boy 4 years old, to be laid back upon the bed, when noticing another gasp he thought he would intubate anyway. He did so as the child lay on his back upon the bed and without the use of any gag whatever. Artificial respiration was then used and the child resuscitated. After half an hour the child drank some milk, was bright, and the household was filled with hope. However, as might be expected, the child died in twelve hours. This counted as one of his cases of "aspiration œdema."

Again the author introduced what he supposed might be an important consideration, with reference to the remarkable fatality from pulmonary complications, both after tracheotomy and intubation. After intubation the records thus far given show 60 to 70 per cent. of the deaths to have occurred from "extension to bronchi," etc. This cannot otherwise be explained except that damage had occurred before and at the time of operation, or else, as the writer suggested as possible, after the operation, and because of the practical abolition of the use of the larynx. He wished to ask that this latter point be investigated, and that someone competent to give the answer would state, *What is the result of this substitution of an inflexible metal tube for the delicately-organized human larynx*, especially in extreme youth, a period when most of these accidents occur? A solution of this problem might lead to the use of somewhat elastic or flexible tubes. While the question of "aspiration œdema" might suggest the use of the sphygmograph to determine the need of an early operation, as well as after either intubation or tracheotomy the substitution of condensed air for the inhalation of air at the ordinary pressure. The use of the pneumatic cabinet may here perhaps be most advantageously employed. Judicious experimenting by those who have cabinets might result in good.

It was claimed that only in some new way of management would this fearful mortality from lung complications after intubation be greatly lessened. The condition of sepsis does not explain it, nor does the entrance of food through the tube.

Dr. D. N. Rankin, of Alleghany, Pa., read a paper on the *Effects of Natural Gas upon the Upper Air Passages.* Natural gas was first used in Pittsburgh as a fuel in 1883. The complaints were loud and many that the heat that it produced made the air too dry for breathing and produced irritation of the throat and nose. Some ceased to use it, others moistened the air with steam from

kettles of hot water, etc. The dryness was not imaginary. It cracked furniture and joints in woodwork—pianos and other expensive furniture was ruined by opening glued joints, etc., before steam was used to moisten the air. It is of great benefit for fuel and light in manufactories and dwellings on account of its cheapness. Before it was learned how to control it explosions occurred. As now managed this rarely occurs. Natural gas is not new. It is mentioned by the ancients, "The Holy Fires of Baker." It was utilized in Germany at Gollesgabe for illuminating purposes. In Pittsburgh and vicinity there are now used 600,000,000 cubic ft. daily. The author gave a chemical analysis of the gas, which disclosed its noxious properties when inhaled.

Patients usually complain first of dryness of the nose and throat, followed by free discharge of muco-purulent matter from these cavities; after which the dryness recurs, sometimes the irritation extending to the larynx and producing considerable hoarseness. Examination with reflected light shows considerable congestion in the nose and pharynx. The extreme sensibility of these parts is promptly relieved by 4 per cent. solutions of cocaine, followed by the application of vaseline to the nose and pharynx. At first gas pipes were made of too porous metal and leaked. This has now been remedied, and now those who have had the gas removed from their dwellings are having it restored.

Conclusion: Since the various improvements in managing it have come into operation the gas can be used without fear of suffocation or any deleterious effects, such as result from inhaling too dry atmosphere. Certainly it is not healthy to breathe, but since it has been taught how to use it, it is no longer breathed by those who use it.

DR. GEORGE A. RICHARDS, of New York, read a paper: *Empyema of the Frontal Sinuses.* The author reported a case of empyema of the frontal sinuses due to obstruction of the infundibulum by polypi which had existed fifteen years. The empyema had produced absorption of the lower wall of the sinus and a small tumor had appeared at the root of the nose about eight months before patient consulted. Opening made into swelling and tube passed through into nose, after about twenty polypi were taken out. After thorough cleansing thrice daily for about a month, patient recovered completely, sight improving at once, also a complete relief to a previously very marked aprosaxia and great improvement in general health, as well as in breathing and smell. Of forty-eight cases collected from literature, only fourteen cases were the result of injury, and but seven the result of obstruction. Some cases occur many years after injury. The majority occur without known cause.

The symptoms are more or less those of an ordinary coryza, together with a feeling of distension, exophthalmos, diplopia, failure of eyesight, and the appearance of a tumor over the superciliary ridge or at the root of the nose. Hard at first, this soon becomes soft and fluctuating. The only treatment is to make an external opening and an opening into nose through which a perforated rubber tube should be passed. Cleanliness and free drainage are most important. Of twenty-five cases so treated cure resulted in twenty-three; in two result was not stated; while when drainage into nose was neglected, the results were not nearly so good. Death occurred in six cases: in four from secondary cerebral abscess, in another from meningitis, and in the last from albuminuria.

DR. A. B. THRASHER, of Cincinnati, read a paper on *Morbid Perforations of Nasal Septum.* The author reported sixteen cases of morbid perforation of septum narium, having special reference to the syphilitic theory of the origin of the disease. Three of the cases occurred in syphilitics, eleven where syphilis had not been present, and two cases were doubtful. In the syphilitic cases the vomer and at least one of the turbinates was invariably attacked; and pain was always felt when this was the case. In the non-syphilitic cases the perforation, as a rule, gave rise to no symptoms; at times seemed to have been caused by picking the nose with finger-nail. There was localized anæsthesia in the ulcerated area, the application of the galvano-cautery producing no pain. The treatment consisted, locally, in detergents, caustics to the ulcerated area, and mild ointments; internal, in remedies addressed to the underlying dyscrasia.

DR. CARL SEILER, of Philadelphia, read a paper on *Clinical Observations on some Cases of a Peculiar Character*, in which he describes the symptoms of a disease not yet well known. He had not seen Dr. W. C. Glasgow's paper read at the Medical Congress at Washington last autumn before the Laryngological Section, and therefore confined his remarks to his own personal observations.

The run of symptoms of cases observed by the author are summed up as follows: 1. Neuralgic muscular pains, usually in the back and chest, and often in the head, ears and limbs. 2. Extreme debility. 3. Mucoid infiltration of the submucous tissue and the formation of thin white pseudo-membranous patches on the surface of the mucous membrane. 4. Absence of febrile symptoms at first, and later high temperature and relatively low rate of pulse. 5. Absence of albumen in the urine and liability to heart failure. 6. Gradual melting away of the pseudo-membranes and the absence of any odor from them. 7. The wide geographical distribution in this country and the infectious, but not contagious, nature of the disorder. 8, and finally. The specific action of benzoate of soda in relieving the symptoms promptly.

Dr. E. S. Shurley, of Detroit, Mich., read a paper on *The Hot Air Treatment of Phthisis*. The paper was for the purpose simply of reporting progress in the use of the Weigert apparatus, and suggesting certain indications for its future trial. The author had used the apparatus in about twenty patients, in about eight with that constancy and exclusiveness that would serve as a test.

Case 1.—Obliged to discontinue the treatment from the pain experienced in the throat and chest from the inhalations.

Case 2.—Administered three and four times a day for fifteen minutes. Temperature 120° to 200°—the latter on three occasions only; 130° to 190° on several. Immediate effects good; left hospital *improved.*

Case 3.—Inhalations caused nausea and vomiting. Hectic fever decreased, gained strength and flesh.

Case 4.—Caused febrile movement, pain in chest, breathlessness and nausea at 120°. Discontinued after ten days.

Case 5.—Laryngeal and pulmonary phthisis. Administered for a week; could not bear it longer.

Case 6.—Advanced stage of phthisis. Administered three times a day for twenty-five minutes at a time—could not bear it and it was omitted.

Case 7.—Effects good.

Case 8.—Obliged to discontinue after fourteen days from loss of appetite, apparently resulting from the administration of hot air.

The author had found it impossible to apply the method of treatment for such a length of time as reported to have been done in Germany.

Dr. W. K. Simpson, of New York, gave the *History of a Case of Acute Rheumatic Laryngitis of Gonorrhœal Origin*. The history is presented on account of extreme rarity of the case—have been unable to find references to similar case. The patient was first seen on February 23, 1888, at which time these notes were taken. Gave the history of two previous attacks of gonorrhœa, has had present attack of gonorrhœa for last five weeks. Three weeks ago began to have rheumatic pains and stiffness in both knees and hips. Three days ago pain and swelling began in left thumb and wrist, so that they now present the typical swelling of acute rheumatic inflammation. Laryngeal symptoms began three days ago, with painful deglutition; on following day there was a painful swelling of lower external portion of larynx. In the evening patient became very hoarse and breathing became very painful.

February 23, 1888. Examination of the throat to-day revealed painful deglutition, pain on pressure over right side of pharynx, absence of cough. Internally both arytenoids swollen and red, right much in excess, it being somewhat œdematous, and is, with the right vocal cord, immobile on phonation. Whole of anterior portion of larynx more or less hyperæmic, the right vocal cord being of a deep purple color and considerably swollen.

Treatment consisted of ac. salicyl., which did not prove effective. Internal laryngeal swelling increased, embarrassing respiration. On February 29 a blister was applied to external larynx and patient placed on iod. of potass., and by March 6 had improved greatly in laryngeal symptoms, but there still remained very little motion of the right arytenoid and cord, and they were both still very red.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Father Damien Memorial Meeting at the Mansion House—Picrotoxin as an Antidote to Morphine—Honors to Sir Andrew Clark—The Lord Mayor Inaugurates a Fund for the Pasteur Institute—A New Method of Disposing of the Dead—A New First Field Dressing—The New Commissioner in Lunacy—Consumption can be Transmitted to Human Beings through Milk.

The first meeting of the committee for promoting a memorial of Father Damien has been held at Marlborough House, under the presidency of the Prince of Wales. The proposal is to erect a monument to the deceased missionary over his grave at Molokai, to establish a leper ward in one of the London hospitals, to endow one or two traveling studentships for the special study of leprosy, and finally to set on foot a full and exhaustive inquiry into the whole question of leprosy in India. It is calculated that there are in the Indian Empire about 250,000 victims of the loathsome scourge, or about one-thousandth part of the whole population, while in the British Colonies it is infrequent, but it is said to be spreading. The Prince of Wales mentioned one startling instance of its presence in England: "At this very moment," said he, "there is a leper with his hands distinctly affected by the disease, engaged at his business in one of the large London meat markets." Sir James Paget in a speech expressed the hope, that the designed stimulus to trained investigation might lead ultimately to the abolition of leprosy. At one time as he observed leprosy prevailed extensively in England and in the west of Europe, and he considered that its gradual elimination is after all not an impossibility. At one time there were six or eight hospitals for lepers in London. The victims were scattered all over England, and there were large numbers in France. Sir James thought that the only way in which it could be reached where it now prevailed was by scientific inquiry, and by improved methods of treatment.

Looking back over the last fifty years, it certainly might be said that more remarkable things had been accomplished than would now be accomplished if leprosy were abolished.

Picrotoxin is now recommended as the best antidote to morphine. The effect of morphine is, of course, to paralyze the action of the respiratory centre; picrotoxin on the contrary, when given in small doses increases such action. Thus the two drugs act in a directly opposite way. An overdose of morphine produces paralysis of the respiratory organs, picrotoxin prevents such paralysis. Picrotoxin stimulates the vaso-constrictor centre of the medulla, and thus counteracts the diminution of the blood pressure due to an overdose of morphine. These two agents again have an entirely opposite effect upon the cerebral hemispheres. Experiments are being made as to the use of the drug in the prevention of asphyxia from chloroform.

The Duke of Cambridge has consented to present to Sir Andrew Clark the senior consulting physician of the London Hospital, his portrait by the late Frank Holl, which was exhibited at the Royal Academy exhibition last year, and subscribed for by the medical and surgical staff and friends of the hospital. A replica of the painting will at the same time be presented to the College of the London Hospital Medical School.

The Lord Mayor was so struck with the Pasteur Institute which he visited while in Paris, that he has called a meeting at the Mansion House to inaugurate a fund for its benefit. The Prince of Wales also paid a visit to the institute during his recent stay in Paris, and was much interested in all he saw. At the same time, as far as hydrophobia is concerned, many authorities on the subject are resolutely opposed to any Pasteur Institute being established in England, contending that by the strict use of the muzzle and a system of quarantine with regard to all dogs imported into Great Britain rabies can be effectually stamped out, the insular position of the country giving it an advantage in this respect not possessed by Continental countries.

A physician whose name does not transpire, has, it is stated, suggested a new method of disposing of our dead, which to say the least, is broadly original, even if it has poor opportunity of becoming popular. In all seriousness the following process is suggested. The doctor proposes to deal with the deceased by means of hydraulic pressure, and in a very short time to reduce him to a cube of twelve inches, a solid block of handsome material resembling veined marble, tasteless, odorless and apparently imperishable. The doctor is stated to have on exhibition a capital cross suitable for a lady's dressing-room. It would at least be interesting to know this gentleman's name, and to see the result of, say one experiment.

A new "first field dressing" devised by Surgeon-Major Bourke, of the Army Medical Staff, is about to be generally adopted in the army. The pad is about 5 inches by 3½ inches, and the bandage about 1¼ or 1½ yards in length, the former being composed of layers of cotton-wool, and the latter of soft cotton gauze. Both are rendered antiseptic by being evenly impregnated with double chloride of mercury and ammonium, which for surgical purposes, has many advantages as compared with sublimate. With each of these pads is supplied a safety-pin and a little bag of iodoform powder for "dusting" purposes.

The new Commissioner in Lunacy, Dr. Thos. Clifford Allbutt, is one of the most distinguished physicians in the whole of Yorkshire, and his enforced removal from Leeds is regretted by ever so many people in that great manufacturing town. Dr. Clifford Allbutt is a man of about 50, with fair hair, and singularly light eyelashes. He received his education, medical and general, at Cambridge—of which University he is an M.A.,—St. George's and Paris, and is F.R.S., F.S.A. He has been consulting physician to various public institutions in Leeds and the neighborhood, and has enjoyed a very large private practice, indeed, it is said of not far off £10,000 a year. As a lunacy commissioner Dr. Allbutt will get only £1,500, but of course a man of his great scientific attainments looks at the matter from the point of view of Kudos as well as of Kerdos. Dr. Allbutt has paid much attention to mental pathology.

Dr. Imlach, of Liverpool, who has given a good deal of attention to the subject, has come to the conclusion that consumption can be transmitted from cows to human beings through milk. His experiments prove that guinea pigs, rabbits and monkeys fed on the milk of tuberculous cows develop tubercular disease.

It may not be generally known that until the sixteenth century alcohol was used only as medicine. It was as a drug, and not as a beverage, that it became known as aqua vita, from its great restorative powers. In 1681 it was first introduced as part of the food allowance of the British Army in the Netherlands. G. O. M.

NEW INSTRUMENTS.

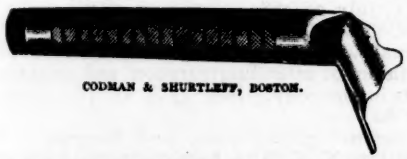
IMPROVED VAGINAL DEPRESSOR SPECULUM.

BY HENRY O. MARCY, A.M., M.D., L.L.D.,
OF BOSTON.

The general adoption of irrigation during surgical operations has materially modified the practice of most American gynecologists in operative measures upon the uterus and vagina; the Sims' speculum and semi-prone position often being very inconvenient.

The patient upon the back, with the hips well over the edge of the table, limbs held by the Clovis' crotch, or some modification of it, furnishes the most convenient position. The depressor in more general use in the one known as the Martin speculum, devised by Dr. A. Martin, of Berlin. This has been found inconvenient and objectionable, because the solid handle causes the drip from the irrigator to flow over the hand and down the arm of the holder, and the breadth of the blade is widest at the vulvar extremity. This often produces overstrain of the vaginal outlet, with frequent lesions, and also occupies valuable space required for operative measures.

Dr. Marcy has sought to overcome these objections in the instrument which he offers to the profession.



Because of its simplicity there is little need for explanation. The vaginal portion is constructed so as to cause a minimum of pressure upon the vulvar outlet. It is irregularly broadened within, so as to secure a firm hold upon the levator muscular loop without slipping, and this allows of depression without overstrain of the external parts, and permits the foreshortening of the instrument to the minimum, scarcely more than one inch in length.

When the uterus is of normal mobility the cervix can be easily brought to the vulva. By its use the anterior vaginal wall and the uterus are rendered much more accessible. The handle is made hollow for the escape of the irrigating fluid and roughened for a secure hold. The speculum is well made and kept in stock by Messrs. Codman & Shurtleff, of Boston, and Tiemann & Co., of New York.

NECROLOGY.

Francis M. Urquhart, M.D.

Francis M. Urquhart, Passed Assistant Surgeon U.S. Marine-Hospital Service, was born in Southampton County, Va., December 3, 1857, and died at Evansville, Indiana, February 14, 1889. Dr. Urquhart received his early education in Hanover Academy, Hanover County, Va., and subsequently entered the medical department of the University of Virginia, from which he graduated in the spring of 1878. He pursued the study of medicine one year in New York City under Dr. John A. Hyeth, and there entered the Charity Hospital of that city, where he remained two years. In the spring of 1881 he appeared before the Board of Examiners of the Marine-Hospital Service, which he passed successfully, and was appointed to the Service as an assistant surgeon, October 20, 1881. He was assigned to duty in the Marine Hospital at New York, and served at that station until April, 1882, when he was transferred to St. Louis, Mo., where he remained till January, 1885, except when upon temporary details at other forts. In December, 1884, he was promoted to the position of Passed Assistant Surgeon. During the summer of 1885, '86, '87 and part of 1888, he was placed in charge of the Quarantine Station at Cape Charles, Va. In August, 1888, he was detailed for special duty in the yellow fever districts of the South, and was successively stationed at Way Cross, Ga., Dupont, Ga., and Live Oak, Fla. In November, 1888, he was ordered to Evansville, Ind., on temporary duty, and while under orders for Buffalo, N.Y., died at the former station, where he was taken sick soon after his arrival. A low form of fever of nearly two months' duration, followed by a relapse and subsequent pneumonia, ended his career. Dr. Urquhart took a high rank in the Service, and enjoyed the confidence of his superior officers, whose orders he obeyed with alacrity. He married Lizzie M. French, of Boston, Mass., in September last, while still on duty at the South, and his bride was with him during his long illness at Evansville, Ind., where he died.

BOOK REVIEWS.

THE RADICAL CURE OF HERNIA. By HENRY O. MARCY, A.M., M.D., LL.D. The Physicians Leisure Library. Detroit Mich.: George S. Davis.

A highly interesting and well written volume of 251 pages, illustrated by eighteen woodcuts. In this work each form of hernia receives attention proportionate to its importance. Not only is the subject taken up from an anatomical and surgical point of view, but our obligations to our predecessors are not ignored. The voluminous history of this important subject is very ingeniously brought together, and so well told that we trace its progress step by step, to the perfect methods of to-day. The views and modes of operating among the most eminent of modern surgeons both here and abroad are fully given. Important results have been brought about by simply modifying the various steps in this operation so that they are more consistent with the maintenance of a perfect aseptic condition. There are four steps to be considered:

1. The mode of incision. 2. The treatment of the sack. 3. The application and choice of

sutures. 4. The treatment of the wound. The author advocates the open wound method. In inguinal hernia he frees the sack, sutures it as high up as possible with the double continuous suture, and cuts away that portion below. All is closed in with the buried animal suture, and kept in a thoroughly aseptic condition. If this is maintained no drainage has been found to be necessary.

In studying the action of various forms of animal sutures buried in the tissues, the author has done no little to advance this branch of surgery. As early as 1870 he had demonstrated experimentally that aseptically applied animal sutures became so incorporated into the vital structures as to be, in a large measure, replaced by connective tissue. It was found that the absorption of catgut often progressed too rapidly, and the parts were left too early without sufficient support, hence the tendon from many animals was experimented with, and various modes of preparation tried. The author has used tendon from the tail of the kangaroo for the past seven years, and finds it all that could be desired.

The reports of operators quoted give 779 cases operated upon with only five deaths, and these are explained as being produced by causes other than the operation.

MISCELLANY.

AMERICAN RHINOLOGICAL ASSOCIATION.—Owing to the absence of a number of the Fellows of the American Rhinological Association in Europe, and the Pacific Coast, the annual meeting will be postponed until October 9, 10 and 11, 1889, at which time it will be held at the Palmer House, Chicago, Ill.

THREE HUNDRED NEW READERS.—THE JOURNAL has added to its mail list, since July 1, over 300 new names. The weekly issue is now 5,200.

LETTERS RECEIVED.

Dr. A. D. Ruggles, New York; Dr. J. R. Shapard, Scottville, Ky.; Dr. Ben H. McClellan, Xenia, O.; Hess Printing Co., Omaha, Neb.; Dolliber Goodale & Co., Boston; Dr. James Bullett, New York; Dr. Charles F. Fisher, Clayton, N. J.; Dr. V. Mott Francis, Newport, R. I.; B. Westermann & Co., New York; Royal Medical and Chirurgical Society, London, Eng.; Dr. Henry O. Marcy, Boston, Mass.; Dr. Archibald Church, Chicago; Dr. Wm. B. Dewees, Salina, Kan.; Dr. G. L. Magruder, Washington; F. A. Davis, Philadelphia; P. Blakiston & Co., Philadelphia; Dr. L. T. Day, Westport, Conn.; Dr. R. Harvey Reed, Mansfield, O.; Dr. J. C. Hoag, Chicago; The St. Paul Book & Stationery Co.; Dr. H. V. Sweringen, Ft. Wayne, Ind.; Dr. Joseph Jones, New Orleans, La.; Dr. William F. Waugh, Philadelphia; I. Haldenstein, New York; Dr. Thomas Opie, Baltimore, Md.; Dr. L. T. Day, Westport, Conn., Fred. D. Van Horen, New York; Oneita Spring Co., Utica, N. Y.; J. H. Bates, W. P. Cleary, New York; Dr. L. F. Billings, Barre, Mass.; Obstetrical Society's Library, London, Eng.; Dr. A. W. Bower, Columbus, O.; Dr. H. W. Quirk, Cleveland, O.; J. Walter Thompson, New York; Dr. J. C. Reeve, Dayton, O.; Rev. Wm. R. Scott, Sterling, Kan.; Dr. Maris Gibson, Wilkesbarre, Pa.; Dr. E. H. Whitcomb, Greenwich, N. Y.; J. L. Hillmantel, Missoula, Mont.; Dr. L. J. King, Visalia, Cal.; Dr. James Dudley Morgan, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 20, 1889, to July 26, 1889.

By direction of the Secretary of War, Major William H. Gardner, Surgeon, is detailed to attend the encampment of the National Guards of the District of the Columbia, at Ft. Washington, Md., from July 22 to 29, 1889, for the purpose of giving instructions to the medical officers and hospital corps in their respective duties. Par. 1, S. O. 164, A. G. O., July 18, 1889.

By direction of the Secretary of War, Capt. Wm. R. Steinmetz, Asst. Surgeon, now at Baltimore, Md., on leave of absence on account of disability, will report in person to the commanding officer of the Watertown Arsenal, Mass., for duty at that station, relieving Lieut.-Col. James C. McKee, Surgeon. Par. 3, S. O. 166, A. G. O., July 20, 1889.

Lieut.-Col. McKee, on being relieved at the Watertown Arsenal, will repair to Philadelphia, Pa., and assume the duties of attending surgeon and examiner of recruits in that city. Par. 3, S. O. 166, A. G. O., July 25, 1889.

Capt. Samuel Q. Robinson, Asst. Surgeon U. S. A., Ft. Hamilton, N. Y. H., is hereby granted leave of absence for two weeks. Par. 11, S. O. 165, Hdqrs. Div. of the Atlantic, July 22, 1889.

Lieut. R. R. Ball, Asst. Surgeon U. S. Army, leave of absence granted in S. O. 87, Dept. of the Missouri, July 9, is extended five days. Par. 1, S. O. 167, A. G. O., July 22, 1889.

PROMOTION.

Asst. Surgeon Charles B. Ewing, to be Asst. Surgeon with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1884. July 5, 1889.

By direction of the President, the State of Arkansas, embracing Little Rock Barracks, is transferred to the Department of the Missouri. General Orders No. 66, Hdqrs. of the Army, A. G. O., July 19, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service. Omitted from last Announcement.

Surgeon John Vansant, when relieved, to proceed to Mobile, Ala. July 11, 1889.

P. A. Surgeon F. W. Mead, relieved from duty as acting Chief Clerk and attending surgeon; ordered to St. Louis, Mo., July 11, 1889.

P. A. Surgeon L. L. Williams, relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md. July 10, 1889.

Week Ending July 20, 1889:

P. A. Surgeon P. C. Kalloch, granted leave of absence for thirty days. July 15, 1889.

Asst. Surgeon W. J. Pettus, when relieved, to proceed to Marine Hospital, Boston, Mass., for duty. July 18, 1889.

Asst. Surgeon R. M. Woodward, granted leave of absence for thirty days. July 15, 1889.

Asst. Surgeon G. T. Vaughan, relieved from duty at Boston, Mass.; ordered to Norfolk, Va. July 18, 1889.

Asst. Surgeon J. B. Stoner, granted leave of absence for twenty-five days. July 15, 1889.

Asst. Surgeon H. D. Geddings, relieved from duty at Baltimore, Md.; ordered to Key West Quarantine Station. July 18, 1889.

Asst. Surgeon C. P. Wertenbaker, relieved from duty at Norfolk; ordered to Galveston, Tex. July 18, 1889.

J. T. Groenevelt, commissioned as Asst. Surgeon July 14, 1889. Ordered to Gulf Quarantine Station for temporary duty. July 20, 1889.